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SMOKING VERSUS NONSMOKING AND THE ARMY PHYSICAL FITNESS TEST

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

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This study examines APFT scores in three different events as well as total scores. The three events are push-ups, sit-ups and a 2 mile run. Scores of current smokers, those who have recently quit smoking, and non-smokers are evaluated. This study contributes to the knowledge of smoking and its link to physical fitness in this limited population using the APFT scores as the unit of measurement. Physical fitness affects overall mental and physical health, and physical readiness. Decreased physical fitness infers decreased endurance on the battlefield and this may impact overall military readiness. This is an important area to evaluate because it may have an overall effect on the future leaders of the military. The results of this study may also help to predict the future health of the current forces and related health care costs.

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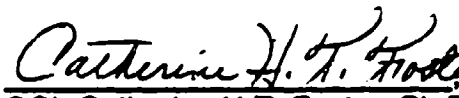

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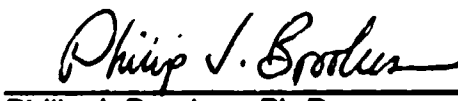

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SMOKING VERSUS NONSMOKING AND ARMY PHYSICAL FITNESS TEST, by Major Joan P. Eitzen, USA, 65 pages.

This study determines the difference in Army Physical Fitness Test (APFT) scores among smoking and nonsmoking students attending the Command and General Staff Officer's Course (CGSOC) 1990-1991.

This study examines APFT scores in three different events as well as total scores. The three events are push-ups, sit-ups and a 2 mile run. Scores of current smokers, those who have recently quit smoking, and non-smokers are evaluated. This study clearly shows a significant difference between APFT scores among smoking and nonsmoking students and implicates smoking as detrimental to physical fitness when using APFT scores as a measure of fitness.

This research project contributes to the knowledge of smoking and its link to physical fitness in this limited population using the APFT scores as the unit of measurement. Physical fitness affects overall mental and physical health, and physical readiness. Decreased physical fitness implies decreased endurance on the battlefield and this may impact overall military readiness. This is an important area to evaluate because it may have an overall effect on the future leaders of the military. The results of this study may also help to predict the future health of the current forces and related health care costs.

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CHAPTER I

INTRODUCTION

Smoking is responsible for more than one in every six deaths in the United States today. Smoking remains the single, greatest cause of preventable death in our society.[1] Smoking students in the Command and General Staff Officer's Course (CGSOC) were the inspiration for conducting this study. The students are frequently noted standing outside the doors of Bell Hall during breaks and in between classes smoking cigarettes. If time and energy spent smoking were put into exercising and improving fitness, would their Army Physical Fitness Test (APFT) scores be higher? First, scores needed to be evaluated and compared to determine if smoker's scores were higher, lower, or the same as non-smokers.

The purpose of this study is to identify whether there is or is not a significant difference between APFT scores in smoking and nonsmoking students attending the CGSOC during 1990-1991. This chapter will discuss aspects associated with smoking in general, smoking in the Army, smoking and fitness, the "Fit to Win" program, and the current study.

General Aspects of Smoking

Smoking is a drug addiction. The Surgeon General's Report identified smoking as the most common cause of avoidable morbidity and premature death in the United States.[2] This conclusion comes twenty-five years after the U.S. Surgeon General's first warning that cigarette smoking is a serious health hazard. The Centers for Disease Control (CDC) has reported that in 1988

alone, more than 434,000 Americans died from health problems caused by smoking. This is an increase of 11 percent since 1985.[3] Iverson in 1987 noted that there have been more than 10 million deaths in this century alone that can be attributed to smoking.[4] Each time a person smokes a cigarette, five minutes of life is lost.[5] In addition, the mortality rate for adult cigarette smokers is double that of nonsmokers.[6]

The health effects of smoking are devastating and account for thirty percent of all cancer deaths. In the United States, cigarette smoking is the major cause of cancer of the lung, larynx, oral cavity, and esophagus. In 1988, the CDC noted that there were 111,985 deaths from lung cancer.[7] Smoking contributes to cancers involving the bladder, kidney, and pancreas. There were 30,850 deaths from these other smoking related cancers in 1988.[8] Smoking is also the major risk factor of coronary heart disease, stroke, and peripheral vascular disease.[9] Coronary heart disease alone results in almost 200,000 deaths per year and thousands of hospital visits.[10] In addition to the ill health effects already mentioned, smoking in the United States contributes to the incidence of peptic ulcer disease, intrauterine growth retardation, and more than 5000 perinatal deaths each year.[11] Smoking is responsible for most of the deaths from emphysema, chronic bronchitis, and fires.[12]

Numerous studies have demonstrated that smokers have higher resting and exercise heart rates than non-smokers.[13] This implies the heart has to work much harder to deliver oxygenated blood to vital organs and tissues. Goldberg noted in 1971 that cigarettes and the effects from smoking them can produce changes opposite to those seen with physical conditioning.[14]

Lungs appear to suffer the most from cigarette smoking, but the cardiovascular system is also affected. Smokers have been found to have a significant increase over non-smokers of symptoms such as cough, shortness of breath, sputum production, and wheezing.[15] Most of these symptoms are related to diseases, such as bronchitis and emphysema, that occur in the small airways of the lungs in smokers.

Smokers' rate of small airway dysfunction is much higher than non-smokers. This is shown by reduced vital capacity and forced expiratory flow rates in pulmonary function studies that compared smokers and non-smokers.[16] Lung function is decreased progressively as the number of smoking pack-years increases.[17] Researchers have also found abnormal lung function in adolescents and young adults who have just begun to smoke. This seems to suggest an immediate negative effect.[18] Increased airway resistance and decreased expiratory flow rates have documented this immediate effect after smoking just one cigarette.[19] Smoking jeopardizes the cardiopulmonary system anatomically and physiologically.

Along with the devastating health effects of smoking, another aspect of smoking that is documented, as well as morbidity and mortality, is the cost to society of cigarette smoking. The cost of smoking is phenomenal in terms of higher health care costs, lost productivity, and increased absenteeism.[20] A forty-five percent higher rate of job absenteeism in the United States was noted among smokers as compared to non-smokers. Yearly, the cost of this absenteeism is a productivity loss of 43 billion dollars.[21] In 1985, the cost of health care associated with smoking related illnesses was over 16 billion dollars.[22]

Although smoking prevalence in the United States is declining, at least in the male population, there are still over 50 million adults who smoke.[23] The recent decline of smoking may have a positive effect on the associated higher health care costs. In 1965, 40 percent of Americans smoked. That was the year the Surgeon General issued his warning against smoking. From 1985 to 1988, the number of Americans who smoked declined from 30 to 29 percent. Because it may take up to 20 years to develop cancer from smoking, society is now paying for the damage that occurred 20 to 30 years ago when larger numbers of people smoked.[24]

One can compare a burning cigarette with a chemical factory that produces over 4000 compounds.[25] Nicotine and carbon monoxide are the predominant compounds. These compounds hinder oxygen delivery and uptake; this impairs endurance and training response.

Smoking in the Military

It is widely held that cigarette smoking adversely affects the health and welfare of society. The military cannot escape the effects of smoking any more than society as a whole can escape them. The military, and the Army in particular, has a significant problem with smoking rates being almost twice that of the civilian sector. Approximately 28 percent of the American population smoke now. This rate is 40 percent among Army personnel. Department of Defense statistics indicate that the percentage of Army personnel who smoke is higher than any other branch of the military.[26]

Health care costs may be higher as well. In 1984, the military health care system spent 210 million dollars on smoking related illnesses.[27] Thirteen

thousand, five hundred man-days are lost annually in the U.S. Navy due to smoking-related illnesses.[28] Upper respiratory infections related to smoking have caused the military significant losses not only in time and money, but also in terms of time lost from work.[29]

The Army still has numerous areas where non-smokers are exposed to smoke from smokers. The CDC reported that in 1988, 3,825 nonsmokers in the United States died from lung cancer caused by passive smoking which is another's smoke.[30] Though smoking areas in Army buildings are to be designated areas, they are often in offices or areas in close proximity to several other offices and areas where there are non-smokers. Most U.S. Army Hospitals, however, have enforced no smoking policies inside the hospitals and those who smoke must go outside if they want to smoke. It is accurate to summarize that smokers affect the military as well as society.

Finally, if one puts aside the health, endurance, and general physical fitness concerns associated with smoking in the military, there are also direct effects of smoking on the battlefield. Discarded cigarette butts and matches may lead the enemy to a smoking soldier. Even though smokers may take precautions, they also get tired and make mistakes. Cigarettes smell and so does a soldier who smokes as well as his gear. Smokers often have chronic coughs. Also, there is the potential of starting a fire with a cigarette butt.

These smells and sounds could alert the enemy to a soldier's location. A captain on a Japanese destroyer spotted a light across the water during a patrol at night in World War II in the South Pacific. It was an American sailor smoking on the conning tower of a surfaced submarine. The Japanese gunners aimed at the glowing cigarette and sank the submarine. After this incident, the

Japanese officer threw his own cigarettes into the sea and vowed never to smoke again. An Army nurse in her memoirs told about U.S. troops that were warned in World War II that on a dark night a lighted cigarette was visible for miles at sea and thousands of feet into the air.[31]

In addition, smoking also appears to interfere with perceptual and motor skills such as reaction time, visual acuity, and time perception.[32] Alterations in these skills on the battlefield could have devastating effects. Ill effects can occur in soldiers addicted to nicotine when smoking is not possible. Side effects of nicotine withdrawal include irritability and nervousness.[33] These side effects can affect concentration and performance on the battlefield and thus can be devastating.

Smoking and Fitness

One particular area that deserves extra attention in the military is the effects of smoking on fitness. Physical fitness is essential for combat readiness. It is important to know if there is a link between smoking and fitness. Chronic diseases such as coronary heart disease, emphysema, bronchitis, and lung cancer have already been noted as smoking's adverse health effects. Many studies have documented the long-term consequences of smoking, along with the effects of second hand smoke, but there has been very little research to evaluate if there is a difference in physical fitness among smokers and nonsmokers. The acute effects of a smoking habit on physical fitness in military populations are not known. The population attending the CGSOC is particularly interesting and important to study as this population will probably become the future leaders of the Army. They should be the most physically fit soldiers and

role models to others in the Army. Determining the difference between smoking and nonsmoking students' APFT scores may demonstrate if a link exists between fitness and smoking.

The Army Physical Fitness Test

In 1985, the Army instituted a physical fitness program.[34] Army leaders were beginning to put more emphasis on physical fitness. The military, particularly the Army, strongly emphasizes the physical fitness test which is given to each soldier twice a year to try to insure minimal physical fitness. Levels of fitness are measured by different events in this test. This is a base level of physical conditioning essential for every soldier in the Army, regardless of sex, specific specialty, or duty assignment. It also helps commanders assess general fitness of their units.

The APFT is a performance test made up of push-ups and sit-ups that are meant to evaluate muscular strength and endurance. Another component is a two mile run that is timed, which is meant to measure cardiorespiratory endurance. The APFT is standardized and objective and evaluates the basic components of physical fitness and a soldier's ability to perform physically.

The APFT uses strict criteria Army wide. The standards that are expected of soldiers are statistically derived and can be correlated with maximal oxygen consumption. This supports its use as a measure of physical fitness.[35] A raw score is obtained in each event and is then converted to a point score based on a scoring table for each event. A point system from zero to 100 has been standardized and adjusted for age and sex differences is used. All soldiers must attain a score of at least 60 points in each of the three events and attain an

overall score of at least 180 to pass and meet the minimum standards of the APFT. The maximum attainable score is 300 points. One must assume that students in CGSOC will do the best they can on this test, though the baseline requirement is only to pass, and little recognition is given for surpassing 180 points. Some units insure soldiers receive a physical fitness badge for scores over 275, however, this is a very inconsistent policy.

Selected soldiers at different points in their career are specially trained to help other soldiers improve their level of fitness. This is in hope that soldiers would become more physically fit and increase their endurance. Strength and endurance are physical qualities desirable in fighting men and women. These qualities should increase with improved physical training. Physically fit soldiers have a greater resistance to illness and disease and recover faster when injured than soldiers who are unfit. They also seem to have greater levels of self confidence, mental toughness, and motivation. Therefore, fit soldiers may cope better with stress and fear of combat and may perform at increased capacities.[36] As stated in Army's Field Manual 100-5, "well trained, physically fit soldiers in cohesive units retain the qualities of tenacity and aggressiveness longer than those which are not." [37]

Aerobic capacity is the best single indicator of physical fitness. This is the ability of the cardiopulmonary system to efficiently deliver oxygen to working muscles.[38] Aerobic capacity is measured as maximal oxygen uptake in the laboratory. The physiological symbol for maximal oxygen uptake is VO_2 max. This refers to the amount of oxygen blood cells can carry to tissues, muscles, and organs. Blood has to have enough oxygen to feed muscles in order for them to work efficiently. Smokers have a lower VO_2max and the heart has to

work harder to deliver enough oxygenated blood to insure nourishment to tissues and organs. VO_2 max is seen as the "gold standard" for cardiopulmonary fitness in military and civilian circles alike. Because performance on the APFT is closely associated with VO_2 max, the APFT score provides a reliable measure of physical fitness.[39]

"Fit to Win"

Over the last several years, the Army has been highlighting efforts in research and development concerning areas in physical fitness. The Secretary of the Army designated 1982 as the Year of Physical Fitness. At this time, the Army Physical Fitness Research Institute was formed at Carlisle Barracks, Pennsylvania. There was much effort put into improving the physical fitness of soldiers. This was seen as a way to increase soldier's ability to successfully sustain operations on a modern and highly intense battlefield.

In 1986, the Department of Defense and the Department of the Army established a set of guidelines that were meant to promote healthier life styles and improve fitness.[40] This program is called "Fit To Win" and the goals of this program are to improve the quality of life and health for all soldiers while at the same time improving combat readiness. "Fit to Win" has become the Army's slogan.

Smoking cessation is a big part of the "Fit to Win" program. This program was meant to help the Army meet the overall goals of maximum combat readiness, efficiency, and work performance. Cigarette smoking is detrimental to health and productivity and is inconsistent with these goals of the Army. If a significant difference is found in APFT scores between smokers and

nonsmokers, this data would provide evidence of a need for increased health education efforts and for more and better smoking cessation programs in the Army.

In the Army's "Fit to Win" program, a Health Risk Appraisal is included as part of the assessment. This consists of a cholesterol, blood pressure and blood sugar evaluation, and administration of a detailed questionnaire asking for smoking information. The smoking related questions have been tested and are valid and reliable. Therefore, they were used to collect smoking data for this study.

The Research Question

This study answers the question, "Is there a difference in APFT scores among smoking and nonsmoking students attending the Command and General Staff Officer Course (CGSOC) A.Y. 90-91?" The subordinate questions deal with whether there is a difference between smokers and nonsmokers in each event in the APFT- the number of push-ups and sit-ups a student can do, and the completion time of the two mile run.

This study on APFT scores in CGSOC students will reveal if there is a difference between smokers and nonsmokers APFT scores. If a decreased level of physical fitness is found in smokers, this infers decreased endurance on the battlefield.

The assumptions made concerning this study were:

a. The questionnaire used to collect the data is valid and reliable.

b. Access will be provided to APFT score cards.

c. Students will be honest with self-reporting smoking behavior.

d. Students will do their best on the APFT.

The following are definitions of terms used for this study:

a. Smokers - students who currently smoke or who quit smoking during the last six months.

b. Nonsmokers - students who do not smoke or who quit smoking more than six months ago.

c. Physical fitness - a state of overall physical well-being

d. APFT - a standardized test administered to all U.S. Army personnel twice a year to measure fitness. Scores are adjusted for age and sex.

There are certain limitations and delimitations associated with this study. The limitations are:

a. Students may under-report their smoking habits

b. When using self-reported survey data, there is a possibility for bias.

c. The survey will not be anonymous but will be confidential.

d. People interested in health will participate and others may not; therefore, there may be a selection bias.

e. Previous exercise history may affect results.

The delimitations are:

a. This study will not include a historical average of APFT scores.

b. This study will not include APFT scores other than scores from the test in October, 1990.

c. This study will only include active duty U.S. Army officers attending the CGSOC regular course.

d. This study will not include use of smokeless tobacco or cigar smoking.

e. This study will not include students with profiles.

f. This study will not include students taking alternate physical fitness tests.

Once this study identifies whether or not there is a link between smoking and APFT scores, results could be used to estimate physical readiness and fitness as measured by the APFT scores in a select group of officers. It is reasonable for one to assume that the more physically fit soldiers are, the easier they will find it to conserve their fighting strength. Since physical fitness affects overall mental and physical health, and physical readiness, this study contributes to the knowledge of if and how smoking is linked to physical fitness in this limited population, with APFT scores being the measure of fitness used.

Perhaps the results of this study may lead to policy changes within the military, specifically the Army. The post exchanges and commissaries deal heavily in cigarette sales. Elimination of cigarette sales in post concessions would carry with it a very strong message about the opinion of military leadership towards smoking.

Limitation of smoking during duty hours and smoking cessation inside all Army buildings such as Army hospitals have done would also be a step in the right direction. Special incentives could be offered for not smoking. These could be in the form of monetary compensation or extra days off. The possibility of forfeiture of health benefits for smoking related diseases should be seriously considered. Increasing number and locations, that is, availability of smoking

cessation programs and support of on-going educational programs on smoking hazards should be mandatory on all Army posts.

The results of this study will be forwarded to the Army Surgeon General and be presented at future research meetings held by the medical as well as military communities. This is in hope of having cigarettes removed from post concessions and to force the issue of health education. The results of this study will also be submitted to a professional journal for publication.

This study lends support to the federal-work-site smoking ban proposed by the Department of Health and Human Services and endorsed by Defense Department officials. This would also protect nonsmokers from the dangers of second hand smoke.

In summary, the probability of chronic health problems may be predicted if the smoking behavior among soldiers remains unchanged. Smoking is detrimental to good health and productivity and adverse effects from smoking are most likely cumulative. This has an overall effect on future leaders of the Army as well as the total military. One of the basic goals of the Army today is to heighten combat readiness, and to increase efficiency and work performance.[4] Physical fitness is fundamental for combat readiness and smoking is not compatible with this goal.

ENDNOTES

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CHAPTER II

LITERATURE REVIEW

Bahrke, Baur, Poland, and Connors in 1988 examined the relationship of cigarette smoking and performance on the U.S. Army Physical Fitness Test. Soldiers who smoked performed fewer push-ups and fewer sit-ups. The average two-mile run time for smokers was slower than for non-smokers, however, the difference was not statistically significant. Statistical comparisons were made with one way analysis of variance. They also summarized that as the number of cigarettes smoked per day increased, repetitions of push-ups and sit-ups decreased. No significant changes were found for the two-mile run time. These studies were done on 147 soldiers attending a four week training course and the authors concluded that soldiers who smoke had signifiantly reduced physical readiness.[1]

In 1986, Jensen looked at the relationship between cigarette smoking and physical fitness as measured by the Army Physical Fitness Test. Jensen looked at scores of 54 enlisted medical company personnel. Data analysis with a one-tailed t test revealed a statistically significant difference between smokers and non-smokers in all APFT scores except the push-up event. Along with these conclusions, this study also identified the need for further research in this area.[2]

Miser in 1987 conducted a study on 192 male soldiers in a Field Artillery unit at Fort Sill, Oklahoma. He obtained a smoking history during routine physical examinations and analyzed scores for two sequential Army Physical Fitness Tests. There were 109 smokers and 83 non-smokers included in this

study. He supported the findings noted previously of Jensen and Bahrke et al. and concluded that non-smokers are more physically fit than smokers as measured by performance on the APFT. All participants in this study were from the same unit that exercised together regularly. This ensured a baseline uniform level of training. He analyzed two sequential APFTs over one year to eliminate the possibility of substandard or extraordinary performance by individuals. This study also showed that the performance on the APFT decreased as the amount smoked per day and the duration increased. These results demonstrated an inverse relationship between smoking and APFT performance. Of additional interest, Miser also noted that there were four soldiers who failed the APFT and all were smokers. At the same time, there were three soldiers who earned the maximum score on the APFT and all three were non-smokers.[3]

Conway and Cronin in 1986 did a study on 1,357 men stationed aboard ships in the San Diego area to examine smoking prevalence and to assess the impact of smoking on their physical fitness. Most smokers in this group were non-black enlisted personnel with lower education levels than average. Smoking was clearly associated with poorer physical fitness, most notably on cardiorespiratory endurance (1.5 mile run performance) and muscular endurance (sit-ups). Men who had never smoked scored higher than current and former smokers. Former smokers performed better on the 1.5 mile run and sit-ups than current smokers. The researchers computed analyses of variance and Pearson product-moment correlation coefficients to examine the degree of association between the physical readiness test and performance and smoking.[4]

In 1988, Marti, et.al, in a study using Swiss data, suggested that smoking exerts a direct, biologically mediated, deleterious effect on endurance capacity. He concluded that the distance covered in a 12 minute endurance run was inversely related to daily cigarette consumption and years of smoking. This association was present even among light smokers who had been smoking less than 2 years when they were compared with non-smokers.[5]

Kristen (1983)[6] once again documented that smokers have increased illness and morbidity as well as premature death. If smoking is decreased and fitness increased, one would expect to see a decrease in premature death.

Goldbarg, et. al, in 1971 noted that smoking only one cigarette lowered cardiac stroke volume in young men. Because of this, the author concluded: "since the major hemodynamic effect of physical training is to increase stroke volume over pre-training levels, cigarettes can thus be said to produce changes oppposite in direction to those of physical conditioning."[7]

Niewoehner, et. al, in 1974 showed a relationship between smoking and pathologic changes in the peripheral airways.[8] He identified the characteristic pulmonary lesion in young smokers to be respiratory bronchiolitis. This finding was confirmed by Berend, et. al, in 1979. He showed the relationship between small airway obstruction on pulmonary function tests with morphologic abnormalities from lung resections.[9]

Dockery, et. al, in 1981 showed that smoking has both an immediate and chronic effect on lung function in a study with a sample of over 8000 people.[10]

Krumholz compared oxygen debt in smokers to nonsmokers in 1964. He looked at smokers and non-smokers after five minutes of exercise and noted

a greater accumulation of oxygen debt in smokers.[11] Other later studies have confirmed that smoking impairs VO_2 max.[12]

Although the next few studies are not directly related to the relationship between the Army Physical Fitness Test scores and smoking, they are still of interest to this study.

The prevalence of smoking among military personnel exceeds the rates established for the general population. Studies done from 1980 to 1985 estimated that approximately half of all military personnel are smokers.[13] With our knowledge about the effects of physical fitness on overall mental and physical health, it is important to know if smoking is related to physical fitness and thereby physical readiness. Smoking is a behavior that can be changed. If a significant difference in APFT scores is found between smoking and nonsmoking students attending the CGSOC, it would provide additional rationale to emphasize health education efforts and to focus preventive health care on providing smoking cessation programs to change this behavior.

Cronin and Conway (1987) stated that effective smoking prevention and cessation programs should decrease health care costs, increase productivity, increase physical fitness, and produce a healthier and fitter force.[14] These are the basic reasons the Army's "Fit to Win" program was initiated.[15]

Literature that examines physical fitness measurements and smoking is limited. The effects of cigarette smoking on physical fitness in the U.S. Army CGSOC students has not been studied. CGSOC students, as future leaders of the military, are an ideal group to assess. If a significant difference in APFT scores is found between students who smoke and students who do not smoke, this study may help medical professionals direct health education and health

promotion efforts in the right direction. This study also contributes valuable information to the current literature. If premature death can be prevented and therefore keep the Army's leaders effective for a longer period of time, other soldiers would be able to benefit from the leader's military education and experience. In addition, if health care costs can be decreased, it would well be worth putting money and effort into health education, and health promotion, particularly smoking cessation programs.

ENDNOTES

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[11] R. Krumholz, R. Chevalier, and J. Ross, "Cardiopulmonary Function in Young Smokers - A Comparison of Pulmonary Function Measurements and Some Cardiopulmonary Responses to Exercise Between a Group of Young Smokers and A Comparable Group of Nonsmokers," Annals of Internal Medicine 60 (April 1964): 603.

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CHAPTER III

METHODOLOGY

It has already been noted that in the Army's "Fit to Win" program, a Health Risk Appraisal is included as part of the assessment. This consists of a cholesterol, blood pressure and blood sugar measurement, and administration of a detailed questionnaire regarding various health related practices including information on smoking. One of the assumptions made during this study was that the questions were tested before the questionnaire was put into use Army wide and that they are valid and reliable. Therefore, the questions pertaining to smoking from this questionnaire were used for the purposes of collecting data for this study.

Each Army CGSOC student was requested to complete a short, seven item questionnaire requesting demographic data and a history of smoking and exercise habits. Included with the questionnaire was an information letter explaining the study and requesting participation and written permission to verify APFT scores. The questionnaire and letter included are at Appendix A. Students were asked to return the questionnaires even if they chose not to participate. They were given the opportunity to state a reason why they chose not to participate, if that were the case. All CGSOC students were given questionnaires; however, only data from U.S. Army students taking the regular APFT test was used for the data analysis.

After the first questionnaires were distributed, 729 were returned within two weeks. One month after the original distribution, a second follow up

distribution was done through section leaders to attempt to increase the response rate. This request is attached as Appendix B. Sixty-six additional questionnaires were returned within one week. Total response rate was almost 80 percent of the approximately 1000 students eligible to participate.

A memorandum and a data collection form were distributed to all Academic Counselors and Evaluators requesting APFT scores of the students who returned the questionnaires to allow access to the APFT scores. The memorandum and data collection form is attached at Appendix C. Forty-two out of eighty of the advisers returned the information requested within two weeks, however, occasional event scores were not included with returned data. A second request (Appendix D) was distributed one month after the original and 20 additional forms were returned within two weeks. Although a third request was distributed two weeks later, the researcher collected the data on APFT scores for the remaining students. Because one advisor was not able to be contacted for APFT results, these students were deleted from the study.

Statview,[1] a statistical package made for the Macintosh computer was used to analyze the data for this study.

ENDNOTES

[1] Statview SE + Graphics, Abacus Concepts, Inc., Berkeley, CA.

CHAPTER IV

DATA ANALYSIS

It is important to comment here on the original intent of this research. This study had hoped to show a relationship between smoking and APFT scores. Initially, Pearson's correlation coefficient was performed. The data collected was not definitive enough to do correlation testing. Pearson's correlation coefficient demands continuous data for both variables. An unsuccesful attempt was made to score amount of smoking in a way to make the data continuous. Since this could not be done, Pearson's correlation was not the appropriate test to use. Therefore, this research was unable to show a relationship between smoking and APFT scores.

Instead, the research question was revised to examine the difference in APFT scores among smoking and nonsmoking students attending CGSOC in 1990-91 and a two tailed t-test was performed. In future studies, this obstacle could be overcome by asking respondents exactly how many cigarettes they smoked every day and years they have smoked. This would provide a continuum of smoking scores.

The t-test is used to compare the means of two groups. The unpaired t-test compares the means of two independent samples. A two-tailed t-test was chosen because it is sensitive to significant differences in either direction. The direction of the difference between the populations is unknown, therefore a two- tailed test is the appropriate test to use. In an unpaired two-tailed t-test of two population means, it must be assumed that the population variances are equal. Fortunately, the test is not overly sensitive to small

differences between the population variances. Since the sample variances in this study are similar, it can be assumed that the population variances are approximately equal. The assumption must also be made that the APFT scores are normally distributed. Since the researcher could not assume the direction of difference between populations and is concerned about a difference in both directions, it is appropriate to use a two-tailed test.

The data collected was separated by Army branches according to whether they were combat, combat support, and combat service support. Combat branches included: Infantry, Field Artillery, Armor, Aviation, and Special Forces. Combat Support included: Air Defense, Engineers, Signal, Chemical, Military Intelligence, Military Police, and Ordance. Combat Service Support included: Transportation, Quartermaster, Judge Advocate General, Chaplains, Adjudant General, Finance, and all Army Medical Department Corps.

The raw data is included in the study at Appendix E. Names have been removed from the data set. The data from the questionnarie (Appendix A) was coded into the computer program as follows:

Question number 1: Choice number 1 was assigned a 3, number 2 was assigned 1.5, and number 3 was assigned a 0.

Question number 2: Choice number 1 was assigned a 3, number 2 was assigned 1.5, and number 3 was assigned a 0.

Question number 3: Eliminated from the data set - irrelevant to the study.

Question number 4: Choice number 1 was assigned a 3, number 2 was assigned a 2, number 3 was assigned a 1, and number 4 was assigned a 0.

Question number 5: Choice number 1 was assigned a 0, number 2 was assigned 0.5, number 3 was assigned a 1, number 4 was assigned a 1.5, and number 5 was assigned a 2.

Question number 6: Choice number 1 was assigned a 0, number 2 was assigned 1, number 3 was assigned a 3, number 4 was assigned a 7.5, and number 5 was assigned a 10.

Question number 7: Assigned yes or no.

Most respondents in this study were male, 32 to 36 years old, Caucasian, and in combat arms branches of the Army. This is reflected below in Table 1:

Table 1. Demographics of Study Respondents.

Demographic Characteristic	Number of Respondents (N)	Percent of Sample
Age (Mean = 36.0)		
32 to 36	489	66.34
37 to 41	208	29.42
42 to 46	29	4.10
47 to 51	1	0.14
Gender		
Male	666	93.67
Female	45	6.33
Race		
Caucasian	612	85.96
Black	65	9.13
Hispanic	8	1.12
Other	4	0.56
Unspecified	23	3.23
Branch Type		
Combat	334	46.91
Combat Support	219	30.76
Combat Service Support	159	22.33

Seventy four percent of study respondents never smoked. Most respondents that reported smoking, smoke less than one pack per day and only one person smoked two packs per day. Of the respondents who do smoke, almost 80 percent verbalized a desire to quit smoking. This data is included in Table 2:

Table 2. Smoking History of Study Respondents.

Historical Characteristic	Number of Respondents (N)	Percent of Sample
Smoking History		
Never Smoked	526	73.98
Quit over 6 Months Ago	138	19.41
Quit less than 6 Months Ago	5	0.70
Current Smoker	42	5.91
Smoker's Desire to Quit		
Wants to Quit	33	78.57
Does not Want to Quit	9	21.43
Cigarettes per Day		
Zero	669	94.09
Less than Ten	15	2.11
Ten to Twenty	16	2.25
Twenty to Forty	10	1.41
Forty or More	1	0.14

The average APFT score for all study respondents was 268. The minimum score was 187 points and the maximum score was 300 points with a range of 113 points. The mean number of repetitions performed for push-ups was 60, sit-ups was 67, and the time for the 2 mile run was almost 15 minutes. Table 3 on the following page summarizes the APFT data for the sample:

Table 3. APFT Scores: All Respondents.

APFT Event	Mean Score	Std. Dev.	Std. Error	Number (N)	Min	Max	Range
Overall Score (Points)	267.99	29.23	1.164	675	187	300	113
Push-Ups (Count)	59.99	16.25	0.623	680	14	144	130
Sit-Ups (Count)	67.35	14.78	0.566	681	27	122	95
2-Mile Run (Mins.)	14.94	1.74	0.067	677	11.27	22.42	11.15

When comparing smokers versus nonsmokers using an unpaired two-tailed t test, overall mean score for smokers was 247.80 and nonsmokers was 269.47. P value was 0.0001. A significant difference ($P < 0.05$) was noted in all other events as shown in Table 4 on the next page. The difference in the means showed a decrease in performance for each APFT event in the smoking group.

Table 4. Analysis of APFT Scores in Smokers (Current and Recent) versus Nonsmokers using Unpaired two-tailed T-Test.

APFT Event	Smoking Status (N)	Mean Score +/- St. Dev.	Unpaired T-Statistic	P-Value (2-tail)
Overall APFT Score	Nonsmoker (629)	269.47 +/- 28.67	4.937	0.0001
	Smoker (46)	247.80 +/- 28.57		
Push-Ups	Nonsmoker (634)	60.44 +/- 16.26	2.714	0.0068
	Smoker (46)	53.74 +/- 14.78		
Sit-Ups	Nonsmoker (635)	68.14 +/- 14.48	5.298	0.0001
	Smoker (46)	56.41 +/- 14.79		
2-Mile Run Time	Nonsmoker (631)	14.87 +/- 1.73	-3.512	0.0005
	Smoker (46)	15.80 +/- 1.71		

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

There were a total of 712 participants in this study. Forty-two were smokers; however 5 had quit smoking during the previous six months and were therefore, counted as smokers for a total of 47 smokers or 6 percent. There were 665 non-smokers or 94 percent of the respondents.

To verify that the low number of smokers who chose to participate were representative of the CGSOC class of 90-91, the researcher collected data from the Health Risk Appraisal that had been done on all students attending CGSOC 90-91. According to this data, 93 percent of students attending CGSOC do not smoke; 7 percent do. Since the response rate of smokers is between 6 and 7 percent, the study is representative of smokers in the current class. Though this rate is much lower than the overall Army rate of smokers, it is probably because this is a highly educated, total officer population who are interested in their health. Also, they may be aware of the social stigma that is attached to smokers today. Most likely, the smokers that chose not to participate had lower scores than those who agreed to participate. It is suspected that if the smokers had high APFT scores, they would probably have chosen to participate. It seems probable that if the non-participant smokers would have participated, the difference between means would be even more significant.

When mean APFT scores were compared, smokers had scores that were statistically significantly ($P < 0.05$) lower compared to scores of non-smokers (247 versus 269). Smokers scored significantly lower that non-smokers in all individual events as well. (Table 4).

The results of this study show a significant difference between smokers and nonsmokers' APFT scores in the students who chose to participa e. This suggests that cigarette smoking is detrimental to physical fitness as validated by the smokers' lower scores in all events in the APFT when compared to scores of non-smokers.

A recommendation for further research is to repeat this study in the same population or another population. It would be valuable to collect scores from the second record test of students and use these scores in the study as well. It would also be very valuable to look at the effect duration and amount of smoking have on APFT scores and to use a group where exercise could be controlled. For example, a study of soldiers in a basic training unit or soldiers attending airborne school. It would also be interesting to look at the relationship between smokeless tobacco and APFT scores as well as academic status of smokers versus nonsmokers. Students in school may not maintain their normal smoking behaviors, but it would be interesting to look at overall scores on the Health Risk Appraisal of smokers and nonsmokers for smoking overall behavior scores.

There is literature to support the many dangers of second hand smoke. It would be valuable to look at APFT scores of students who have wives that smoke.

Smoking cessation efforts would be valued in this population as evidenced by smokers' 80 percent positive response rate when asked if they wanted to quit. Studies were noted earlier that showed that lung function and VO_2 max quickly improves after smoking cessation (see literature review). The results of this study can be used to encourage the Army to make policy changes

concerning smoking and to increase smoking cessation efforts, health education efforts, and to show smokers that smoking does have a negative effect on their physical performance when using the APFT as a measurement tool. The potential for further research in this area is unlimited.

In summary, this study clearly shows a significant difference between APFT scores among smoking and nonsmoking students in the CGSOC 1990-91 class. This study implicates smoking as detrimental to physical fitness when using APFT scores as a measure of fitness.

Appendix A - INFORMATION LETTER

ATZL-SWG 7 January, 1990

MEMORANDUM FOR: ALL CGSOC STUDENTS

SUBJECT: INFORMATION LETTER - PARTICIPATION IN A STUDY

1. I would like your help in obtaining data for my research project for the MMAS program. My research question is "What is the relationship between smoking and the Army Physical Fitness Test (APFT) scores of U.S. Army students, A.Y. 90-91, in the Command and General Staff Officer Course (CGSOC)? "

2. In order to do this, I need to know if you smoke, how much you smoke, and how long you have smoked. I also need to know if you have ever smoked in the past, if you quit and when, or if you have never been a smoker. The data obtained from this questionnaire will remain completely confidential and will have no effect on you. All data will be presented in summary format only. It is extremely important that the data you supply be accurate.

3. The APFT score must be verified from the APFT score card because most scores are not totaled at the time of the PT test. Once the smoking history has been tied to a verified APFT score, the names will be discarded from the data set. The attached questionnaire should take less than five minutes to complete. Please complete the questionnaire and return both this information letter and the questionnaire to your survey representative.

4. Please sign below and return this questionnaire to your survey representative even if you do not wish to participate. Results of this study will be presented in May for all interested personnel when the thesis is completed. Thank you in advance for your assistance.

Joan P. Eitzen
MAJ, AN
10D

I understand that participation in this study is voluntary and I will /will not (cross out one that does not apply) allow the researcher to verify my PT scores from the APFT score card.

_____
(Signature)

NAME (printed) _____ Section _____

If you have chosen not to participate and are willing to share your reasons for not participating, please use the space below.

Appendix A - QUESTIONNAIRE

This questionnaire is for Army personnel only Survey Control Number 9136-004

Name _____ Section _____ Group _____

Branch_____ Age____ Sex_____ Race _____

Please circle the number of the correct answer.

1. How often do you do at least 20 minutes of non-stop aerobic activity (vigorous exercise that greatly increases your breathing and heart rate such as running, fast walking, biking, swimming, rowing, etc)?
   (1) 3 or more times a week
   (2) 1 or 2 times a week
   (3) rarely or never

2. How often do you do exercises that improve muscle strength, such as pushups, situps, weight lifting, a Nautilus/Universal workout, resistance training, etc?
   (1) 3 or more times a week
   (2) 1 or 2 times a week
   (3) rarely or never

3. Do you have a physical condition that limits or prevents you from exercising?
   (1) Yes (2) No

4. Do you smoke cigarettes now?
   (1) Yes
   (2) No, "I quit in the last 6 months"
   (3) No, "I quit over 6 months ago"
   (4) No, "I never smoked"

5. How much do you smoke now?
   (1) "I don't smoke"
   (2) less than a half-pack a day
   (3) one-half to one pack a day
   (4) one to two packs a day
   (5) two or more packs a day

6. How long have you smoked?
   (1) "I don't smoke"
   (2) less than 1 year
   (3) 2 to 4 years
   (4) 5 to 10 years
   (5) more than 10 years

7. Do you want to stop smoking ?
   (1) "I don't smoke"
   (2) "I would like to quit now"
   (3) "I would like to quit someday"
   (4) "I don't want to stop smoking"

Appendix B - MEMORANDUM TO SECTION LEADERS

ATZL-SWG 7 February, 1991

MEMORANDUM FOR: SECTION LEADERS

SUBJECT: MMAS RESEARCH STUDY

1. I would like your help with increasing the response rate to the questionnaire I recently sent out to all CGSOC students. This data is necessary for my research project for the MMAS program. My research question is "What is the relationship between smoking and the Army Physical Fitness Test (APFT) scores of U.S. Army students, A.Y. 90-91, in the Command and General Staff Officer Course (CGSOC)?"

2. Participation in this study is voluntary, however I have had only 40 smokers respond. This data will only be presented in summary format and once scores are verified, I will discard names from the data. Results will not be seen anywhere in anyones record.

3. Would you please ask the students in your section if they would be willing to fill out this questionnaire now if they did not do so before? If they filled it out the first time, they cannot fill it out again. I really need their help in making this study a worthwhile effort to obtain my MMAS. If students choose not to participate, I would like them to fill out a questionnaire as well and sign it stating they will not give me the permission I need and possibly a reason why they have chosen not to participate. This will still increase my response rate. Please return the questionnaires to:

MAJ Joan Eitzen
Section 10 D

4. Feel free to contact me if you would like more information or if you need more questionnaires. Thank you in advance for your cooperation and assistance.

Joan P. Eitzen
MAJ, AN

Appendix C
MEMORANDUM TO ACADEMIC COUNSELORS AND EVALUATORS

ATZL-SWG 10 February, 1991

MEMORANDUM FOR: ACADEMIC COUNSELORS AND EVALUATORS

SUBJECT: MMAS RESEARCH STUDY

1. I would like your help in verifying Army Physical Fitness Test (APFT) scores from the October physical fitness test. This data is necessary for my research project for the MMAS program. My research question is "What is the relationship between smoking and the Army Physical Fitness Test (APFT) scores of U.S. Army students, A.Y. 90-91, in the Command and General Staff Officer Course (CGSOC)?"

2. Participation in this study is voluntary and students have given me written permission to verify their PT scores from the APFT score cards. Once scores are verified, I will discard names from the data.

3. Please provide requested information on the back of this memo for the students listed (U.S. Army students only taking the regular APFT test) and return to :

MAJ Joan Eitzen
Section 10 D

Only students who have chosen to participate are listed.

4. Feel free to contact me if you would like more information. Thank you in advance for your cooperation and assistance.

Joan P. Eitzen
MAJ, AN

Appendix C - DATA COLLECTION FORM

ACE _____ Section _____ Group _____

Student's Name	Sit-ups		Push-ups		2 mile run		Total score	
	#	score	#	score	#	score	#	score
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								

Appendix D - FOLLOW-UP MEMORANDUM TO ACADEMIC COUNSELORS AND EVALUATORS

ATZL-SWG 13 March, 1991

MEMORANDUM FOR: ACADEMIC COUNSELORS AND EVALUATORS

SUBJECT: MMAS RESEARCH STUDY - FOLLOW-UP REQUEST

1. This memorandum is in follow-up to my request for your help in verifying Army Physical Fitness Test (APFT) scores from the October physical fitness test (memorandum dated 20 February, 1991). This data is necessary for my research project for the MMAS program. My research question is "What is the relationship between smoking and the Army Physical Fitness Test (APFT) scores of U.S. Army students, A.Y. 90-91, in the Command and General Staff Officer Course (CGSOC)?"

2. Participation in this study is voluntary and students have given me written permission to verify their PT scores from the APFT score cards. Once scores are verified, I will discard names from the data.

3. If you have misplaced the original memorandum with the names of the students' scores I need, please leave me a note in my box in 10D. I am currently on emergency leave and will provide you with another copy upon my return.

4. Thank you very much for your cooperation.

MAJ Joan Eitzen
Section 10 D

Appendix D - DATA COLLECTION FORM

ACE _____ Section _____ Group _____

Student's Name	Sit-ups		Push-ups		2 mile run		Total score	
	#	score	#	score	#	score	#	score
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								

Appendix E - RAW DATA

The raw data for this study is included in the following fifteen pages (44-58).

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
1	CSS	38	FEM...	CAU	3.0	3.0	0	0	0	.	300	85	75	15.33
2	C	33	MALE	CAU	1.5	1.5	0	0	0	.	300	83	80	13.48
3	C	34	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
4	C	38	MALE	CAU	1.5	1.5	1	0	0	.	223	45	50	16.08
5	CSS	38	MALE	CAU	3.0	3.0	0	0	0	.	275	75	70	16.52
6	C	34	MALE	CAU	3.0	1.5	0	0	0	.	259	42	65	15.75
7	CSS	38	MALE	CAU	3.0	3.0	0	0	0	.	300	76	75	12.62
8	CSS	45	MALE	CAU	3.0	1.5	0	0	0	.	242	40	40	15.38
9	C	38	MALE	CAU	1.5	0	0	0	0	.	226	40	40	14.85
10	CS	38	MALE	CAU	3.0	1.5	0	0	0	.	218	50	50	17.37
11	C	38	MALE	CAU	3.0	1.5	1	0	10.0	.	247	55	70	16.73
12	C	38	MALE	CAU	3.0	3.0	0	0	0	.	256	40	40	12.95
13	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	300	82	80	12.93
14	CSS	38	MALE	CAU	3.0	1.5	1	0	0	.	259	71	70	14.85
15	C	35	MALE	CAU	3.0	3.0	0	0	0	.	205	45	41	15.62
16	CSS	33	MALE	BLACK	0	1.5	0	0	0	.	251	52	60	14.85
17	CS	38	MALE	CAU	1.5	1.5	1	0	0	.	217	41	50	15.62
18	C	38	MALE	CAU	3.0	1.5	0	0	0	.	300	80	80	13.40
19	CSS	50	MALE	CAU	3.0	3.0	1	0	7.5	.	221	38	37	16.60
20	C	33	MALE	CAU	3.0	3.0	0	0	0	.	291	75	80	12.93
21	CSS	38	MALE	CAU	3.0	3.0	1	0	0	.	259	76	70	15.17
22	C	33	MALE	CAU	3.0	3.0	0	0	0	.	300	85	70	12.62
23	C	33	MALE	CAU	3.0	3.0	1	0	0	.	300	75	70	13.35
24	CS	38	MALE	CAU	1.5	0	0	0	0	.	246	60	40	15.32
25	CS	38	MALE	CAU	3.0	3.0	0	0	0	.	268	61	70	14.17
26	C	38	MALE	CAU	3.0	3.0	0	0	0	.	253	60	40	14.35
27	CS	42	FEM...	CAU	1.5	0	0	0	0	.	228	24	41	21.85
28	C	38	MALE	CAU	1.5	3.0	1	0	0	.	280	75	64	15.85
29	CSS	40	MALE	CAU	3.0	1.5	3	1.5	10.0	YES	256	45	55	16.22
30	C	33	MALE	CAU	1.5	1.5	0	0	0	.	288	72	60	14.27
31	C	38	MALE	CAU	3.0	1.5	0	0	0	.	264	70	66	13.87
32	CS	33	MALE	CAU	1.5	1.5	0	0	0	.	272	62	60	14.72
33	CS	34	MALE	BLACK	1.5	1.5	3	5	7.5	YES	.	.	.	.
34	C	38	MALE	CAU	3.0	1.5	0	0	0	.	254	55	60	16.42
35	C	33	MALE	CAU	3.0	3.0	0	0	0	.	300	73	60	13.97
36	CSS	34	MALE	BLACK	3.0	3.0	0	0	0	.	211	45	45	16.75
37	C	38	MALE	CAU	3.0	3.0	0	0	0	.	288	80	70	15.85
38	CS	33	MALE	CAU	3.0	3.0	1	0	7.5	.	238	40	50	14.85
39	C	40	MALE	CAU	3.0	3.0	1	0	0	.	300	75	80	13.37
40	CSS	44	MALE	CAU	1.5	1.5	0	0	0	.	244	40	50	16.97
41	CS	40	MALE	BLACK	3.0	1.5	1	0	7.5	.	230	35	50	14.97
42	C	38	MALE	.	3.0	3.0	0	0	0	.	.	.	.	.
43	CS	34	MALE	BLACK	3.0	3.0	0	0	0	.	267	70	73	13.97
44	CSS	38	FEM...	CAU	3.0	3.0	0	0	0	.	300	80	70	16.82
45	CSS	38	MALE	.	3.0	3.0	1	0	0	.	300	73	78	12.93
46	CS	41	MALE	CAU	3.0	3.0	1	0	7.5	.	263	75	68	11.80
47	C	37	MALE	CAU	3.0	1.5	0	0	0	.	280	60	66	14.38
48	CS	37	MALE	CAU	1.5	1.5	3	1.5	10.0	YES	264	73	60	15.83

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
49	C	37	MALE	CAU	3.0	3.0	0	0	0	.	300	73	78	13.82
50	C	34	MALE	CAU	3.0	3.0	0	0	0	.	278	65	72	14.87
51	C	34	MALE	CAU	3.0	3.0	1	0	0	.	183	38	39	16.75
52	CS	33	MALE	CAU	3.0	3.0	0	0	0	.	183	38	39	16.75
53	C	34	MALE	CAU	3.0	3.0	0	0	0	.	183	38	39	16.75
54	C	36	MALE	CAU	3.0	3.0	1	0	0	.	274	60	68	15.08
55	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	263	60	66	15.08
56	CS	32	MALE	BLACK	1.5	1.5	0	0	0	.	268	60	66	14.05
57	C	36	MALE	BLACK	0	3.0	0	0	0	.	287	66	76	17.35
58	CS	36	MALE	CAU	1.5	3.0	0	0	0	.	214	40	40	15.48
59	CS	36	MALE	CAU	3.0	3.0	1	0	0	.	272	64	76	14.87
60	CSS	36	MALE	CAU	1.5	1.5	0	0	0	.	212	40	60	17.97
61	C	32	MALE	CAU	3.0	3.0	1	0	0	.	300	61	76	12.80
62	CS	36	MALE	CAU	1.5	1.2	0	0	0	.	274	67	68	13.77
63	CS	42	MALE	CAU	0	0	0	0	0	.	246	35	45	14.75
64	CS	37	MALE	CAU	1.5	3.0	0	0	0	.	266	73	66	16.47
65	C	32	MALE	.	1.5	0	0	0	0	.	222	41	50	16.95
66	C	36	MALE	CAU	3.0	3.0	1	0	0	.	247	60	66	16.97
67	C	37	MALE	CAU	3.0	3.0	1	0	0	.	266	73	71	14.60
68	C	36	MALE	CAU	1.5	1.5	0	0	0	.	.	.	.	.
69	CSS	37	MALE	BLACK	3.0	3.0	0	0	0	.	300	73	76	14.45
70	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	73	80	14.18
71	CSS	41	MALE	CAU	3.0	1.5	0	0	0	.	266	64	61	14.38
72	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
73	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	242	60	45	14.18
74	C	36	MALE	CAU	3.0	3.0	3	1.0	10.0	YES	256	60	60	14.62
75	CSS	41	MALE	CAU	1.5	1.5	3	1.0	10.0	YES	234	60	62	17.00
76	C	32	MALE	CAU	3.0	3.0	0	0	0	.	300	78	82	11.27
77	C	33	MALE	CAU	3.0	1.5	0	0	0	.	263	63	76	17.38
78	CS	36	MALE	CAU	1.5	1.5	3	1.0	10.0	YES	210	30	40	16.13
79	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	76	80	13.23
80	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
81	C	37	MALE	CAU	3.0	3.0	0	0	0	.	287	61	76	16.07
82	C	33	MALE	CAU	3.0	3.0	0	0	0	.	284	67	73	14.43
83	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	247	61	67	16.93
84	C	35	MALE	.	3.0	3.0	3	0	0	.	300	73	78	13.48
85	CSS	41	FEM...	CAU	1.5	1.5	0	0	0	.	284	32	71	16.85
86	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	13.87
87	CS	34	MALE	CAU	3.0	3.0	1	0	0	.	.	.	.	.
88	C	33	MALE	CAU	3.0	3.0	1	0	0	.	256	71	76	15.15
89	C	42	MALE	CAU	3.0	3.0	1	0	0	.	248	58	62	16.85
90	C	36	MALE	CAU	3.0	3.0	0	0	0	.	287	70	87	14.85
91	C	36	MALE	CAU	3.0	3.0	3	.5	10.0	NO	256	71	80	16.23
92	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	69	85	12.27
93	C	33	MALE	CAU	3.0	3.0	0	0	0	.	300	73	78	12.52
94	C	36	MALE	CAU	1.5	3.0	0	0	0	.	223	51	47	16.33
95	CS	33	MALE	CAU	3.0	3.0	0	0	0	.	261	73	76	14.82
96	CS	40	MALE	CAU	3.0	3.0	0	0	0	.	256	41	64	16.73

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
97	CSS	36	MALE	·	3.0	3.0	0	0	0	·	288	63	80	14.63
98	CS	34	MALE	CAU	3.0	3.0	0	0	0	·	300	83	105	12.70
99	C	34	MALE	BLACK	3.0	3.0	0	0	0	·	300	86	108	13.20
100	C	38	MALE	CAU	3.0	3.0	1	0	3.0	·	300	74	75	13.47
101	CSS	36	MALE	CAU	3.0	1.5	1	0	3.0	·	249	60	80	13.40
102	CS	35	MALE	BLACK	3.0	3.0	0	0	0	·	284	74	72	13.60
103	CSS	44	MALE	·	3.0	3.0	1	0	0	·	300	86	94	12.88
104	C	34	MALE	CAU	3.0	3.0	1	0	3.0	·	300	73	75	13.83
105	C	34	MALE	CAU	3.0	3.0	0	0	0	·	288	73	48	13.62
106	C	33	MALE	CAU	3.0	1.5	0	0	0	·	287	70	75	16.05
107	CSS	42	MALE	CAU	3.0	3.0	1	0	0	·	·	·	·	·
108	CS	36	MALE	CAU	3.0	3.0	0	0	0	·	291	68	87	15.22
109	CSS	33	MALE	BLACK	3.0	3.0	0	0	0	·	300	73	75	13.37
110	CS	33	MALE	BLACK	3.0	3.0	0	0	0	·	288	42	75	14.83
111	CSS	44	MALE	BLACK	3.0	3.0	0	0	0	·	300	71	68	13.77
112	C	36	MALE	CAU	3.0	1.5	0	0	0	·	288	62	85	16.27
113	C	36	MALE	CAU	3.0	3.0	0	0	0	·	287	78	62	15.02
114	C	35	MALE	CAU	1.5	1.5	0	0	0	·	300	78	82	14.53
115	C	35	MALE	·	0	0	3	1.0	7.5	YES	224	46	40	16.45
116	CSS	36	MALE	CAU	3.0	3.0	0	0	0	·	300	74	82	12.80
117	CS	34	MALE	CAU	1.5	3.0	0	0	0	·	288	66	80	16.63
118	CSS	35	MALE	CAU	1.5	1.5	3	1.5	10.0	NO	212	63	48	17.78
119	CS	34	MALE	CAU	1.5	0	0	0	0	·	219	40	66	17.47
120	C	36	MALE	CAU	3.0	0	1	0	0	·	221	60	62	17.40
121	C	43	MALE	CAU	3.0	3.0	1	0	0	·	288	80	68	17.78
122	CSS	36	FEM...	BLACK	1.5	1.5	0	0	0	·	288	62	61	20.57
123	CS	34	FEM...	BLACK	1.5	1.5	0	0	0	·	281	28	78	16.30
124	CS	37	MALE	·	3.0	3.0	3	1.0	10.0	YES	277	62	78	16.22
125	CS	34	MALE	·	3.0	3.0	0	0	0	·	274	66	66	15.12
126	CS	35	MALE	CAU	3.0	3.0	0	0	0	·	300	74	80	12.38
127	C	33	MALE	CAU	3.0	3.0	0	0	0	·	288	47	82	13.97
128	CS	37	MALE	CAU	3.0	3.0	0	0	0	·	274	65	66	15.23
129	CSS	41	MALE	CAU	3.0	3.0	0	0	0	·	300	72	73	12.38
130	C	35	MALE	CAU	3.0	3.0	0	0	0	·	300	78	84	12.23
131	C	36	MALE	CAU	3.0	3.0	0	0	0	·	281	47	82	14.30
132	C	36	MALE	CAU	0	0	1	0	0	·	268	40	36	16.67
133	CS	34	MALE	CAU	3.0	3.0	1	0	0	·	290	72	78	14.80
134	CS	35	MALE	CAU	3.0	3.0	1	0	0	·	281	45	68	15.82
135	CS	36	MALE	CAU	3.0	3.0	0	0	0	·	244	56	60	14.47
136	C	34	MALE	CAU	3.0	3.0	0	0	0	·	288	60	66	14.00
137	CS	33	MALE	CAU	3.0	3.0	1	0	0	·	300	74	78	13.33
138	C	34	MALE	CAU	3.0	3.0	0	0	0	·	300	80	80	13.17
139	CS	36	MALE	CAU	3.0	3.0	0	0	0	·	300	73	81	14.07
140	CS	32	MALE	CAU	3.0	3.0	0	0	0	·	281	74	66	13.55
141	C	36	MALE	CAU	3.0	3.0	1	0	0	·	276	60	70	13.85
142	CS	33	FEM...	·	3.0	3.0	0	0	0	·	288	48	75	16.78
143	C	37	MALE	CAU	3.0	3.0	0	0	0	·	300	90	81	12.27
144	C	34	MALE	CAU	3.0	3.0	0	0	0	·	300	75	90	12.63

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
145	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	83	80	13.85
146	CS	33	MALE	CAU	1.5	1.5	0	0	0	.	246	41	86	14.83
147	C	36	MALE	CAU	1.5	3.0	2	0	0	.	263	63	85	14.52
148	CSS	35	FEM...	BLACK	1.5	1.5	0	0	0	.	217	30	44	21.80
149	CSS	34	MALE	CAU	1.5	1.5	0	0	0	.	256	63	80	16.98
150	CSS	41	MALE	.	3.0	1.5	0	0	0	.	286	63	73	13.77
151	CS	36	MALE	CAU	0	0	0	0	0	.	228	42	45	16.08
152	CS	.	.	.	1.5	0	0	0	0	.	246	45	48	14.62
153	CSS	36	MALE	BLACK	3.0	1.5	0	0	0	.	244	58	62	15.30
154	C	34	MALE	CAU	3.0	3.0	0	0	0	.	282	40	74	14.08
155	C	36	MALE	CAU	1.5	1.5	3	1.5	10.0	YES	187	36	35	18.42
156	C	36	MALE	CAU	1.5	1.5	1	0	0	.	215	41	55	17.00
157	CSS	35	MALE	CAU	3.0	3.0	0	0	0	.	300	80	85	11.37
158	C	32	MALE	CAU	3.0	3.0	0	0	0	.	274	47	80	15.22
159	CS	34	MALE	CAU	3.0	1.5	0	0	0	.	209	46	42	16.98
160	C	36	MALE	CAU	3.0	3.0	0	0	0	.	214	40	48	15.93
161	C	36	MALE	CAU	3.0	0	0	0	0	.	221	48	48	17.57
162	C	34	MALE	CAU	1.5	3.0	0	0	0	.	254	73	80	16.83
163	CS	33	MALE	CAU	1.5	1.5	0	0	0	.	258	60	48	14.83
164	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	300	78	83	13.55
165	CSS	36	FEM...	CAU	3.0	1.5	0	0	0	.	300	42	81	18.82
166	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	77	81	12.75
167	C	33	MALE	CAU	3.0	3.0	0	0	0	.	270	62	66	14.70
168	CS	32	MALE	CAU	1.5	1.5	0	0	0	.	263	66	64	16.50
169	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	73	73	14.45
170	CSS	36	MALE	CAU	3.0	3.0	2	0	0	.	273	70	64	14.00
171	CSS	35	MALE	CAU	3.0	1.5	0	0	0	.	237	64	45	16.10
172	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	288	72	73	14.50
173	C	33	MALE	CAU	3.0	3.0	0	0	0	.	300	73	78	14.00
174	C	33	MALE	CAU	3.0	3.0	0	0	0	.	287	70	78	14.00
175	CS	46	MALE	CAU	3.0	3.0	0	0	0	.	300	72	73	14.70
176	C	34	MALE	CAU	3.0	1.5	0	0	0	.	229	60	48	16.60
177	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	225	40	36	15.80
178	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	288	73	78	14.00
179	C	42	MALE	CAU	3.0	1.5	0	0	0	.	248	48	60	16.50
180	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	300	73	78	14.00
181	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	73	78	14.00
182	CSS	36	MALE	CAU	3.0	1.5	0	0	0	.	300	73	78	13.87
183	CS	36	MALE	CAU	3.0	3.0	3	1.5	10.0	YES	293	78	71	13.87
184	C	36	MALE	CAU	3.0	1.5	0	0	0	.	266	67	73	12.77
185	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	287	68	75	13.05
186	C	34	MALE	CAU	3.0	3.0	0	0	0	.	274	66	75	12.97
187	C	33	MALE	CAU	3.0	3.0	0	0	0	.	264	71	64	13.68
188	C	36	MALE	CAU	3.0	3.0	0	0	0	.	290	83	78	13.42
189	CS	42	MALE	CAU	3.0	3.0	1	0	0	.	286	67	64	13.72
190	CSS	33	MALE	CAU	3.0	3.0	0	0	0	.	300	86	86	12.96
191	CSS	40	FEM...	BLACK	3.0	3.0	1	0	10.0	.	300	48	76	16.66
192	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	269	61	72	14.30

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
193	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	78	13.36
194	C	33	MALE	CAU	3.0	3.0	0	0	0	.	290	68	78	12.87
195	C	37	MALE	CAU	3.0	1.5	0	0	0	.	274	64	78	14.70
196	C	38	MALE	CAU	3.0	3.0	1	0	10.0	.	249	52	68	16.65
197	C	32	MALE	CAU	3.0	3.0	0	0	0	.	298	78	76	12.87
198	CSS	35	MALE	CAU	1.5	1.5	0	0	0	.	235	42	67	16.38
199	C	38	MALE	.	1.5	1.5	0	0	0	.	228	45	58	16.80
200	C	34	MALE	HISP	3.0	3.0	0	0	0	.	300	78	88	11.78
201	CS	32	MALE	CAU	3.0	3.0	0	0	0	.	295	75	80	12.45
202	C	36	MALE	CAU	3.0	3.0	0	0	0	.	242	60	48	12.36
203	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	291	68	82	14.87
204	C	42	MALE	CAU	3.0	3.0	1	0	0	.	291	68	80	12.40
205	CS	35	MALE	CAU	3.0	3.0	0	0	0	.	285	72	75	13.10
206	C	35	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	13.62
207	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	75	14.70
208	CS	34	MALE	BLACK	1.5	1.5	1	0	0	.	264	72	75	17.27
209	C	41	MALE	CAU	3.0	3.0	0	0	0	.	300	75	75	13.10
210	CSS	36	MALE	CAU	1.5	1.5	0	0	0	.	240	54	67	17.45
211	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	100	86	13.76
212	C	34	MALE	CAU	1.5	3.0	0	0	0	.	236	60	61	16.10
213	C	36	MALE	CAU	0	0	0	0	0	.	200	36	40	16.37
214	C	36	MALE	CAU	3.0	3.0	0	0	0	.	250	56	62	14.62
215	CSS	34	MALE	CAU	1.5	3.0	0	0	0	.	222	40	40	14.67
216	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	280	68	68	15.75
217	C	36	MALE	CAU	3.0	3.0	3	1.5	10.0	YES	251	56	56	17.07
218	CS	33	MALE	CAU	3.0	3.0	0	0	0	.	290	61	71	14.32
219	C	36	MALE	CAU	1.5	1.5	1	0	0	.	225	48	60	16.65
220	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	75	16.00
221	C	33	MALE	CAU	3.0	1.5	0	0	0	.	282	66	66	15.62
222	CS	34	MALE	.	3.0	3.0	0	0	0	.	269	61	68	16.05
223	C	40	MALE	CAU	3.0	3.0	1	0	10.0	.	300	78	80	14.62
224	C	36	MALE	CAU	3.0	3.0	1	0	0	.	297	82	82	14.35
225	CSS	40	MALE	CAU	1.5	1.5	3	5	10.0	NO	209	48	74	16.65
226	C	36	MALE	CAU	3.0	3.0	1	0	0	.	299	68	74	16.07
227	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	276	62	68	12.48
228	CSS	34	MALE	CAU	3.0	1.5	0	0	0	.	246	60	60	16.35
229	C	36	MALE	CAU	3.0	1.5	0	0	0	.	300	75	78	14.66
230	CS	36	MALE	CAU	1.5	1.5	0	0	0	.	210	40	40	16.62
231	C	36	MALE	CAU	0	0	0	0	0	.	235	45	45	14.38
232	CSS	36	MALE	CAU	3.0	3.0	1	0	0	.	213	48	50	16.62
233	C	32	MALE	BLACK	3.0	3.0	0	0	0	.	275	64	68	14.38
234	CS	34	MALE	CAU	3.0	1.5	0	0	0	.	248	60	60	16.00
235	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	300	75	78	13.32
236	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	72	78	14.08
237	CSS	42	MALE	CAU	3.0	3.0	0	0	0	.	272	68	73	16.69
238	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	280	56	70	16.76
239	CS	35	MALE	CAU	3.0	3.0	3	5	10.0	NO	258	60	40	12.66
240	C	35	MALE	CAU	1.5	1.5	0	0	0	.	242	42	68	16.36

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
241	CSS	.	MALE	HISP	0	3.0	0	0	0	.	300	80	81	13.23
242	C	36	MALE	CAU	3.0	3.0	3	.5	10.0	YES	283	68	73	16.55
243	CS	36	MALE	CAU	0	0	0	0	0	.	261	64	80	16.15
244	CSS	36	MALE	BLACK	1.5	1.5	0	0	0	.	204	36	43	16.37
245	C	36	MALE	CAU	3.0	1.5	0	0	0	.	245	45	73	16.15
246	C	37	MALE	CAU	0	0	0	0	0	.	226	38	48	16.15
247	C	34	MALE	CAU	1.5	1.5	0	0	0	.	253	40	67	14.36
248	CS	34	MALE	CAU	0	0	0	0	0	.	257	58	67	16.83
249	C	34	MALE	CAU	3.0	1.5	0	3	0	.	254	60	65	15.37
250	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	226	40	60	16.06
251	C	34	MALE	CAU	3.0	3.0	0	0	0	.	268	61	81	16.59
252	C	39	MALE	CAU	1.5	0	0	0	0	.	241	61	61	16.07
253	CS	35	MALE	CAU	3.0	3.0	0	0	0	.	285	45	78	16.80
254	CS	46	MALE	CAU	0	0	0	0	0	.	188	38	38	17.72
255	CSS	36	MALE	CAU	1.5	0	0	0	0	.	300	75	78	13.08
256	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	80	80	13.03
257	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	12.87
258	CS	37	MALE	CAU	3.0	1.5	0	0	0	.	278	60	80	13.60
259	C	37	MALE	CAU	3.0	3.0	0	0	0	.	280	60	84	14.00
260	CS	36	MALE	CAU	0	0	0	0	0	.	.	.	41	.
261	C	42	MALE	CAU	3.0	1.5	0	0	0	.	277	43	78	13.65
262	CS	41	FEM...	CAU	3.0	3.0	0	0	0	.	277	35	78	14.02
263	CSS	34	MALE	CAU	3.0	3.0	3	1.5	10.0	YES	222	60	42	17.07
264	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	78	12.85
265	CS	32	FEM...	BLACK	3.0	1.5	0	0	0	.	274	48	80	15.02
266	CS	37	MALE	CAU	.	.	1	0	0	.	272	48	71	14.85
267	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	68	80	13.07
268	C	36	MALE	CAU	1.5	1.5	1	0	1.0	.	272	64	71	14.12
269	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	280	72	78	15.88
270	CSS	34	MALE	CAU	0	0	3	1.5	10.0	YES	193	38	38	17.00
271	CSS	36	MALE	.	3.0	1.5	0	0	0	.	188	38	38	16.80
272	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	75	78	12.00
273	C	36	MALE	CAU	3.0	1.5	3	.5	10.0	YES	240	73	43	16.50
274	CS	33	MALE	CAU	1.5	1.5	0	0	0	.	283	68	80	15.12
275	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	282	66	116	12.97
276	C	33	MALE	CAU	0	0	0	0	0	.	300	74	78	13.00
277	C	37	MALE	CAU	1.5	1.5	1	0	0	.	275	75	75	17.00
278	C	36	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
279	C	36	MALE	CAU	3.0	3.0	0	0	0	.	288	78	78	15.00
280	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	230	44	46	13.78
281	C	36	MALE	CAU	3.0	3.0	0	0	0	.	248	40	80	12.87
282	CS	36	MALE	CAU	3.0	1.5	0	0	0	.	268	48	67	14.40
283	C	36	MALE	BLACK	0	3.0	0	0	0	.	225	48	60	16.23
284	C	34	MALE	CAU	3.0	1.5	0	0	0	.	248	48	80	15.08
285	CSS	41	MALE	HISP	3.0	3.0	0	0	0	.	285	66	84	14.12
286	CSS	34	FEM...	CAU	3.0	1.5	0	0	0	.	300	84	81	13.08
287	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	300	73	73	13.78
288	CSS	34	MALE	BLACK	3.0	3.0	0	0	0	.	300	74	78	14.00

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
280	C	37	MALE	BLACK	1.5	1.5	0	0	0	.	226	53	67	16.40
290	CSS	43	MALE	CAU	1.5	1.5	1	0	0	.	268	54	70	14.50
291	CSS	46	MALE	CAU	3.0	3.0	1	0	0	.	210	41	64	16.00
292	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	298	60	70	14.00
293	C	41	MALE	.	1.5	1.5	3	1.0	10.0	YES	218	46	40	16.00
294	C	37	MALE	CAU	3.0	1.5	1	0	0	.	300	73	74	14.00
295	CS	36	MALE	BLACK	3.0	1.5	0	0	0	.	223	46	50	15.00
296	C	35	MALE	CAU	3.0	1.5	0	0	0	.	276	48	70	13.00
297	CSS	36	MALE	CAU	3.0	1.5	0	0	0	.	290	45	62	14.07
298	CS	34	MALE	CAU	1.5	1.5	0	0	0	.	258	48	61	14.12
299	CS	36	MALE	CAU	3.0	1.5	0	0	0	.	282	50	60	14.50
300	CSS	39	MALE	CAU	3.0	3.0	0	0	0	.	248	45	62	16.10
301	CSS	35	FEM...	BLACK	3.0	3.0	0	0	0	.	248	14	69	16.00
302	C	.	MALE	CAU	3.0	3.0	0	0	0	.	300	110	90	13.00
303	C	36	MALE	CAU	1.5	1.5	0	0	0	.	261	48	77	16.48
304	C	36	MALE	CAU	3.0	3.0	1	0	0	.	290	61	75	14.00
305	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	270	70	70	16.00
306	C	36	MALE	CAU	3.0	3.0	0	0	0	.	283	60	70	14.30
307	C	39	MALE	CAU	3.0	1.5	0	0	0	.	286	67	80	13.30
308	CSS	37	MALE	CAU	1.5	1.5	1	0	10.0	.	258	66	68	16.06
309	CSS	43	MALE	CAU	3.0	3.0	1	0	0	.	300	72	80	14.30
310	CS	36	MALE	CAU	3.0	3.0	1	0	0	.	270	62	80	15.45
311	C	32	MALE	CAU	3.0	3.0	0	0	0	.	300	100	112	11.56
312	CS	33	MALE	CAU	3.0	3.0	0	0	0	.	300	80	80	11.35
313	CS	37	MALE	CAU	1.5	0	0	0	0	.	224	57	44	16.02
314	CSS	36	MALE	CAU	3.0	3.0	1	0	10.0	.	300	75	70	13.07
315	C	33	MALE	CAU	3.0	3.0	0	0	0	.	287	66	70	14.06
316	CS	36	MALE	CAU	1.5	0	0	0	0	.	223	48	60	16.45
317	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	304	40	40	16.47
318	C	36	MALE	CAU	0	3.0	0	0	0	.	263	60	69	16.77
319	C	39	MALE	CAU	3.0	3.0	0	0	0	.	241	36	75	17.20
320	C	36	MALE	CAU	3.0	3.0	0	0	0	.	188	34	62	16.33
321	CS	40	FEM...	CAU	3.0	3.0	0	0	0	.	.	.	.	.
322	C	37	MALE	CAU	3.0	1.5	0	0	0	.	300	73	74	13.30
323	CSS	33	FEM...	CAU	1.5	3.0	0	0	0	.	273	36	69	17.42
324	CSS	34	MALE	BLACK	3.0	1.5	0	0	0	.	299	64	82	14.07
325	C	37	MALE	CAU	3.0	3.0	1	0	3.0	.	300	100	100	12.00
326	C	36	MALE	CAU	3.0	3.0	0	0	0	.	243	60	64	16.45
327	CS	33	MALE	CAU	1.5	1.5	0	0	0	.	300	36	40	16.00
328	CSS	37	MALE	CAU	3.0	3.0	1	0	0	.	296	73	75	16.12
329	CS	40	MALE	CAU	3.0	3.0	1	0	0	.	297	60	80	13.00
330	C	34	MALE	CAU	1.5	0	0	0	0	.	242	60	61	14.00
331	C	33	MALE	CAU	3.0	3.0	0	0	0	.	297	60	82	13.00
332	C	36	MALE	CAU	3.0	3.0	1	0	10.0	.	216	44	60	17.70
333	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	12.00
334	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	298	60	70	13.12
335	CSS	40	MALE	CAU	3.0	1.5	1	0	0	.	215	40	60	14.00
336	CS	36	MALE	BLACK	1.5	1.5	0	0	0	.	290	66	66	17.15

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
337	CBS	36	MALE	CAU	1.5	1.5	0	0	0	.	250	50	65	16.27
338	CB	36	MALE	CAU	3.0	3.0	1	0	0	.	281	60	68	12.45
339	CBS	37	MALE	CAU	1.5	3.0	0	0	0	.	270	60	63	14.13
340	CB	36	MALE	CAU	3.0	3.0	0	0	0	.	300	61	72	13.07
341	CB	40	MALE	CAU	3.0	3.0	0	0	0	.	302	61	74	13.05
342	C	34	MALE	BLACK	3.0	3.0	0	0	0	.	300	73	76	12.53
343	C	36	MALE	CAU	3.0	1.5	0	0	0	.	240	50	71	15.05
344	C	36	MALE	CAU	3.0	3.0	0	0	0	.	290	73	80	14.17
345	CB	36	MALE	CAU	3.0	1.5	0	0	0	.	260	61	80	12.59
346	CB	40	MALE	CAU	3.0	3.0	0	0	0	.	286	67	76	14.19
347	C	34	MALE	CAU	1.5	3.0	0	0	0	.	250	60	65	16.05
348	C	36	MALE	CAU	3.0	3.0	0	0	0	.	281	60	68	12.45
349	CBS	36	MALE	CAU	1.5	1.5	0	0	0	.	230	40	60	16.73
350	C	37	MALE	CAU	3.0	1.5	1	0	3.0	.	234	40	40	14.79
351	CBS	36	MALE	BLACK	3.0	1.5	0	0	0	.	260	74	60	13.10
352	C	36	MALE	CAU	1.5	3.0	3	1.5	7.5	NO	240	60	60	15.05
353	CB	36	MALE	CAU	1.5	3.0	0	0	0	.	285	60	61	14.75
354	CB	36	MALE	CAU	3.0	3.0	2	0	10.0	.	302	68	76	13.03
355	CB	36	FEM...	HISP	1.5	1.5	0	0	0	.	250	36	40	16.52
356	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	73	80	12.39
357	CBS	36	MALE	BLACK	3.0	3.0	0	0	0	.	300	76	64	12.05
358	C	36	MALE	CAU	0	0	0	0	0	.	247	60	66	14.76
359	CB	36	MALE	CAU	3.0	3.0	0	0	0	.	270	74	71	13.39
360	CBS	36	MALE	CAU	1.5	1.5	3	1.5	10.0	YES	230	43	60	16.45
361	C	36	MALE	CAU	1.5	1.5	0	0	0	.	266	60	66	13.36
362	CB	36	MALE	CAU	1.5	1.5	0	0	0	.	225	60	60	16.00
363	CBS	36	MALE	CAU	3.0	1.5	3	0	0	.	280	60	67	14.73
364	CBS	34	MALE	CAU	3.0	1.5	1	0	0	.	277	60	70	13.02
365	CB	37	MALE	CAU	3.0	3.0	0	0	0	.	301	70	64	12.00
366	C	36	MALE	CAU	3.0	3.0	0	0	0	.	264	73	70	16.07
367	CB	36	MALE	CAU	3.0	3.0	3	0	0	.	285	60	66	14.45
368	C	36	MALE	CAU	1.5	1.5	1	0	3.0	.	266	76	73	13.76
369	CBS	36	MALE	CAU	3.0	3.0	1	0	0	.	265	72	60	17.00
370	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	100	100	13.47
371	CB	36	FEM...	CAU	3.0	3.0	1	0	0	.	277	25	70	16.00
372	CB	36	MALE	BLACK	3.0	3.0	1	0	0	.	284	73	65	14.19
373	CBS	37	FEM...	CAU	0	1.5	0	0	0	.	300	48	70	16.05
374	C	34	MALE	CAU	0	0	0	0	0	.	230	60	64	16.05
375	C	36	MALE	CAU	3.0	3.0	1	0	0	.	279	66	73	14.77
376	CBS	36	MALE	CAU	1.5	3.0	0	0	0	.	262	60	65	14.00
377	CB	36	MALE	CAU	1.5	0	0	0	0	.	250	60	61	13.50
378	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	76	85	11.39
379	C	36	MALE	CAU	3.0	0	0	0	0	.	260	60	61	13.57
380	CBS	37	MALE	BLACK	3.0	3.0	0	0	0	.	288	74	77	14.07
381	C	33	MALE	CAU	3.0	3.0	0	0	0	.	300	74	76	13.30
382	C	37	MALE	CAU	3.0	3.0	3	1.5	10.0	YES	276	65	67	14.42
383	C	40	MALE	OTHER	3.0	3.0	0	0	0	.	282	61	65	16.03
384	CBS	33	MALE	CAU	1.5	3.0	1	0	0	.	270	60	77	16.32

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
385	C	34	MALE	CAU	3.0	1.5	0	0	0	.	268	61	74	16.48
386	CSS	36	MALE	CAU	3.0	3.0	3	1.5	16.0	YES	287	80	80	17.22
387	C	38	MALE	CAU	3.0	3.0	3	1.5	14.0	YES	288	81	86	16.35
388	CSS	34	MALE	CAU	3.0	3.0	0	0	0	.	283	47	71	16.00
389	C	36	MALE	CAU	3.0	3.0	0	0	0	.	286	71	70	16.27
390	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	288	73	71	14.98
391	C	44	MALE	CAU	3.0	3.0	0	0	0	.	.	.	48	17.83
392	CS	34	MALE	CAU	3.0	3.0	1	0	0	.	283	74	86	14.38
393	C	33	MALE	.	1.5	1.5	0	0	0	.	276	61	70	15.53
394	C	34	MALE	CAU	1.5	3.0	0	0	0	.	300	70	80	15.08
395	C	38	MALE	CAU	3.0	3.0	0	0	0	.	288	61	70	14.87
396	CSS	32	FEM...	CAU	3.0	3.0	0	0	0	.	272	51	80	16.87
397	CS	34	MALE	BLACK	3.0	3.0	0	0	0	.	286	73	80	14.08
398	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	286	80	80	14.30
399	C	34	MALE	CAU	3.0	3.0	0	0	0	.	286	61	73	16.75
400	C	33	MALE	CAU	3.0	3.0	1	0	0	.	287	72	80	14.13
401	CSS	40	FEM...	CAU	3.0	1.5	3	2	16.0	YES	258	31	32	20.20
402	C	38	MALE	CAU	3.0	3.0	0	0	0	.	284	80	80	13.47
403	C	34	MALE	CAU	3.0	3.0	0	0	0	.	282	80	70	15.00
404	C	36	MALE	CAU	3.0	3.0	1	0	0	.	300	73	70	15.08
405	CSS	34	MALE	CAU	3.0	3.0	0	0	0	.	278	73	80	14.80
406	CS	37	MALE	CAU	1.5	0	1	0	0	.	261	80	80	16.27
407	C	38	MALE	CAU	3.0	3.0	0	0	0	.	271	61	80	16.70
408	C	36	MALE	CAU	3.0	3.0	0	0	0	.	288	70	70	15.60
409	CS	34	MALE	CAU	3.0	3.0	1	0	0	.	283	73	80	14.06
410	CSS	44	MALE	CAU	3.0	1.5	0	0	0	.	264	55	40	15.30
411	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	281	73	77	14.06
412	C	36	MALE	CAU	3.0	3.0	0	0	0	.	286	80	70	14.02
413	CSS	40	FEM...	CAU	3.0	3.0	1	0	0	.	268	15	41	16.95
414	C	37	MALE	CAU	0	3.0	1	0	0	.	287	73	73	16.65
415	CS	43	MALE	.	3.0	3.0	1	0	14.0	.	.	.	.	.
416	C	36	MALE	CAU	3.0	1.5	0	0	0	.	300	70	80	12.75
417	C	34	MALE	BLACK	3.0	3.0	0	0	0	.	300	74	70	15.00
418	CSS	37	MALE	CAU	1.5	1.5	0	0	0	.	.	.	.	.
419	C	38	MALE	CAU	3.0	3.0	1	0	0	.	284	67	61	15.97
420	CS	36	MALE	CAU	1.5	1.5	0	0	0	.	243	44	80	16.85
421	C	38	MALE	CAU	3.0	3.0	0	0	0	.	300	82	80	11.38
422	C	36	MALE	BLACK	1.5	1.5	0	0	0	.	277	61	61	15.42
423	C	34	MALE	CAU	3.0	3.0	0	0	0	.	282	67	74	14.73
424	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	73	70	15.05
425	CS	33	MALE	CAU	3.0	3.0	0	0	0	.	270	80	70	15.07
426	C	36	MALE	CAU	3.0	3.0	0	0	0	.	261	48	74	16.15
427	CS	33	MALE	CAU	1.5	3.0	0	0	0	.	268	80	80	14.75
428	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	70	80	15.07
429	C	34	MALE	CAU	1.5	3.0	0	0	0	.	288	80	72	14.38
430	CS	36	MALE	CAU	1.5	1.5	0	0	0	.	268	82	72	14.80
431	C	37	MALE	CAU	1.5	1.5	0	0	0	.	271	82	70	15.02
432	CSS	36	FEM...	CAU	3.0	3.0	0	0	0	.	300	85	70	17.77

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
433	C	37	MALE	CAU	3.0	0	0	0	0	.	247	48	55	16.33
434	CS	36	MALE	CAU	1.5	0	0	0	0	.	238	50	61	16.35
435	CS	41	MALE	CAU	1.5	1.5	1	0	0	.	281	66	76	16.73
436	CSS	34	MALE	CAU	3.0	3.0	0	0	0	.	300	76	88	13.38
437	C	33	MALE	CAU	3.0	3.0	0	0	0	.	306	77	89	13.02
438	C	37	MALE	CAU	3.0	3.0	0	0	0	.	293	73	85	14.05
439	CSS	34	FEM...	CAU	3.0	3.0	1	0	10.0	.	300	69	80	16.43
440	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	256	60	61	17.32
441	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	286	68	73	14.38
442	C	36	MALE	CAU	3.0	3.0	1	0	7.5	.	.	72	100	.
443	CSS	37	MALE	CAU	1.5	1.5	0	0	0	.	270	47	67	16.30
444	C	36	MALE	CAU	3.0	3.0	1	0	0	.	273	64	66	14.78
445	C	36	MALE	CAU	3.0	3.0	0	0	0	.	276	66	74	14.08
446	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	13.72
447	C	35	MALE	OTHER	3.0	3.0	0	0	0	.	300	100	100	11.88
448	CS	37	MALE	CAU	3.0	0	1	0	0	.	261	49	68	15.53
449	CS	37	MALE	CAU	3.0	3.0	1	0	0	.	300	75	75	12.50
450	CSS	36	FEM...	CAU	1.5	1.5	0	0	0	.	264	66	82	16.48
451	C	33	MALE	BLACK	3.0	0	0	0	0	.	221	37	61	16.07
452	C	36	MALE	CAU	3.0	1.5	0	0	0	.	288	72	77	14.38
453	CSS	44	MALE	CAU	3.0	3.0	1	0	0	.	300	68	75	14.67
454	C	33	MALE	CAU	3.0	3.0	0	0	0	.	306	100	100	13.35
455	C	36	MALE	CAU	3.0	3.0	1	0	0	.	300	75	80	13.05
456	C	37	MALE	CAU	3.0	3.0	3	3	10.0	YES	282	60	80	16.28
457	CSS	36	MALE	BLACK	3.0	3.0	0	0	0	.	300	82	76	16.02
458	CSS	40	MALE	CAU	3.0	3.0	0	0	0	.	300	82	80	13.67
459	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	86	81	13.62
460	CS	36	FEM...	CAU	3.0	3.0	0	0	0	.	282	48	77	16.55
461	CS	34	MALE	.	3.0	1.5	0	0	0	.	267	60	84	16.05
462	CS	33	MALE	BLACK	3.0	3.0	0	0	0	.	300	76	87	13.08
463	CS	36	MALE	CAU	0	0	0	0	0	.	238	38	60	16.42
464	C	35	MALE	CAU	3.0	3.0	0	0	0	.	300	86	80	13.67
465	C	36	MALE	HISP	3.0	1.5	1	0	0	.	240	62	80	16.73
466	CS	42	MALE	CAU	1.5	3.0	1	0	0	.	235	36	80	14.35
467	C	36	MALE	CAU	1.5	1.5	3	1.5	1.5	NO	240	65	85	16.58
468	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	300	82	82	13.45
469	C	36	MALE	CAU	3.0	1.5	0	0	0	.	216	46	46	16.57
470	C	36	MALE	CAU	1.5	1.5	0	0	0	.	271	65	80	14.17
471	CSS	35	FEM...	BLACK	3.0	1.5	0	0	0	.	.	35	46	.
472	CSS	33	MALE	CAU	3.0	3.0	0	0	0	.	288	73	81	16.02
473	CSS	36	MALE	CAU	1.5	0	0	0	0	.	258	60	76	16.37
474	CS	36	MALE	CAU	1.5	1.5	0	0	0	.	225	55	75	16.42
475	C	37	MALE	CAU	3.0	3.0	0	0	0	.	288	80	80	13.83
476	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	86	80	13.42
477	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	75	81	13.38
478	CS	36	MALE	CAU	3.0	1.5	0	0	0	.	267	61	87	16.38
479	C	35	MALE	CAU	3.0	0	0	0	0	.	238	54	65	17.83
480	CSS	36	MALE	BLACK	3.0	3.0	0	0	0	.	283	80	81	16.75

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
481	C	38	MALE	CAU	1.5	1.5	1	6	6	.	254	44	76	16.35
482	CS	37	FEM...	.	3.0	3.0	3	.5	16.0	YES	282	36	71	16.42
483	CS	36	MALE	CAU	3.0	3.0	1	0	0	.	300	56	81	13.36
484	C	36	MALE	CAU	3.0	3.0	0	0	0	.	271	47	76	13.72
485	C	35	MALE	CAU	3.0	3.0	1	0	0	.	249	56	69	14.30
486	C	34	MALE	BLACK	3.0	3.0	0	0	0	.	287	66	80	16.00
487	C	35	MALE	CAU	3.0	3.0	0	0	0	.	287	56	76	16.00
488	C	36	MALE	CAU	3.0	3.0	0	0	0	.	264	67	76	13.27
489	CS	36	FEM...	CAU	3.0	3.0	1	0	16.0	.	272	56	76	16.00
490	CSS	36	MALE	BLACK	1.5	1.5	0	0	0	.	263	66	69	13.00
491	C	32	MALE	BLACK	3.0	3.0	0	0	0	.	300	66	86	11.20
492	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	77	86	13.00
493	CS	36	MALE	BLACK	3.0	1.5	0	0	0	.	273	66	76	15.70
494	CSS	36	MALE	BLACK	1.5	1.5	1	0	3.0	.	267	46	67	14.42
495	CSS	34	MALE	CAU	3.0	3.0	0	0	0	.	277	64	76	14.30
496	CSS	35	MALE	CAU	3.0	3.0	0	0	0	.	286	76	76	14.30
497	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	286	76	76	14.48
498	C	36	MALE	CAU	3.0	3.0	3	1.5	16.0	YES	264	66	86	13.00
499	CS	35	FEM...	CAU	1.5	1.5	0	0	0	.	300	66	76	17.36
500	CS	43	MALE	CAU	3.0	3.0	1	0	0	.	.	66	.	16.36
501	CS	36	MALE	BLACK	3.0	3.0	2	0	0	.	300	66	71	16.00
502	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	286	66	86	16.48
503	C	36	MALE	CAU	3.0	1.5	0	0	0	.	300	47	86	14.47
504	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	76	76	13.00
505	C	34	MALE	CAU	3.0	1.5	1	0	0	.	282	62	76	16.77
506	CSS	36	MALE	CAU	0	0	0	0	0	.	267	47	66	14.30
507	C	36	MALE	CAU	0	0	0	0	0	.	300	51	86	16.00
508	C	34	MALE	CAU	3.0	0	0	0	0	.	220	40	45	14.30
509	CS	36	MALE	CAU	3.0	1.5	0	0	0	.	242	46	64	16.78
510	CSS	36	MALE	CAU	1.5	1.5	0	0	0	.	230	46	66	16.45
511	C	34	MALE	CAU	1.5	1.5	0	0	0	.	264	72	66	17.30
512	CSS	.	MALE	.	1.5	1.5	1	0	16.0	.	300	76	76	16.30
513	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	76	76	16.48
514	C	36	MALE	BLACK	3.0	3.0	0	0	0	.	277	46	76	14.15
515	CS	36	MALE	CAU	3.0	3.0	1	0	0	.	282	76	76	16.00
516	C	37	MALE	CAU	1.5	3.0	0	0	0	.	300	66	76	14.30
517	C	36	MALE	CAU	3.0	1.5	0	0	0	.	300	46	86	13.47
518	C	35	MALE	CAU	3.0	3.0	1	0	0	.	300	76	86	12.97
519	C	34	MALE	CAU	3.0	1.5	3	.5	16.0	YES	300	74	76	13.75
520	CS	37	MALE	CAU	3.0	1.5	3	.5	16.0	YES	287	72	66	13.00
521	C	46	MALE	CAU	3.0	1.5	0	0	0	.	.	.	.	.
522	C	36	MALE	BLACK	0	3.0	0	0	0	.	300	66	74	14.17
523	C	36	MALE	CAU	3.0	1.5	0	0	0	.	234	46	46	14.48
524	CS	34	MALE	CAU	3.0	1.5	0	0	0	.	300	74	71	13.70
525	CSS	37	MALE	CAU	1.5	1.5	1	0	0	.	241	66	66	16.48
526	C	36	MALE	HISP	3.0	3.0	0	0	0	.	227	60	66	16.13
527	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	210	36	36	16.12
528	C	34	MALE	CAU	1.5	3.0	0	0	0	.	282	66	66	16.00

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	F-U	S-U	RUN
529	CSS	38	FEM...	CAU	3.0	3.0	0	0	0	•	290	78	34	21.38
530	C	34	MALE	CAU	1.5	1.5	0	0	0	•	[illegible]	73	74	[illegible]
531	C	41	MALE	CAU	0	0	3	2.5	10.0	NO	272	71	[illegible]	[illegible]
532	CS	41	FEM...	CAU	3.0	3.0	0	0	0	•	300	78	48	17.38
533	C	33	MALE	CAU	3.0	3.0	0	0	0	•	282	[illegible]	61	13.76
534	C	38	MALE	CAU	3.0	1.5	3	.5	10.0	NO	284	[illegible]	40	14.18
535	C	43	MALE	CAU	3.0	3.0	1	0	0	•	300	78	[illegible]	14.40
536	C	38	MALE	CAU	3.0	1.5	0	0	0	•	297	78	78	12.87
537	CS	34	MALE	CAU	3.0	3.0	0	0	0	•	287	[illegible]	73	14.35
538	CS	42	MALE	CAU	3.0	1.5	0	0	0	•	284	[illegible]	[illegible]	16.32
539	CSS	38	MALE	CAU	3.0	3.0	0	0	0	•	300	78	[illegible]	13.87
540	CS	41	MALE	CAU	3.0	3.0	1	0	7.5	•	233	38	40	[illegible]
541	CS	34	MALE	CAU	3.0	3.0	0	0	0	•	300	73	78	12.12
542	C	38	MALE	CAU	3.0	1.5	0	0	0	•	245	40	[illegible]	14.00
543	CSS	37	MALE	CAU	0	0	0	0	0	•	224	40	[illegible]	17.33
544	CS	37	MALE	BLACK	3.0	3.0	0	0	0	•	245	40	[illegible]	13.30
545	C	34	MALE	CAU	1.5	1.5	0	0	0	•	207	40	40	16.82
546	CSS	•	FEM...	•	•	•	0	0	3	•	222	38	[illegible]	17.37
547	CSS	38	MALE	CAU	1.5	0	0	0	0	•	230	48	67	16.38
548	CSS	38	MALE	CAU	3.0	3.0	0	0	0	•	273	48	73	14.76
549	C	38	MALE	CAU	0	0	0	0	0	•	[illegible]	73	78	14.47
550	C	40	MALE	BLACK	5.0	3.0	1	0	0	•	276	72	76	[illegible]
551	C	38	MALE	CAU	3.0	3.0	1	0	0	•	276	73	[illegible]	14.40
552	C	34	MALE	CAU	3.0	3.0	0	0	0	•	274	[illegible]	76	[illegible]
553	C	41	MALE	CAU	3.0	1.5	0	0	0	•	244	[illegible]	61	16.33
554	CS	40	MALE	CAU	0	0	0	0	0	•	[illegible]	45	[illegible]	[illegible]
555	C	38	MALE	CAU	1.5	1.5	3	.5	7.5	YES	[illegible]	38	42	14.76
556	CSS	37	MALE	CAU	3.0	1.5	3	1.5	10.0	YES	[illegible]	67	[illegible]	[illegible]
557	CSS	38	FEM...	CAU	1.5	1.5	1	0	0	•	232	[illegible]	[illegible]	[illegible]
558	C	38	MALE	CAU	1.5	1.5	0	0	0	•	[illegible]	[illegible]	[illegible]	[illegible]
559	CS	38	MALE	CAU	3.0	3.0	0	0	0	•	297	72	76	[illegible]
560	CSS	38	MALE	CAU	1.5	1.5	3	1.0	10.0	YES	204	40	41	17.37
561	C	32	MALE	CAU	3.0	1.5	0	0	0	•	[illegible]	48	72	14.30
562	C	37	MALE	CAU	3.0	3.0	0	0	0	•	287	[illegible]	76	14.38
563	C	34	MALE	CAU	0	1.5	0	0	0	•	277	[illegible]	[illegible]	[illegible]
564	CSS	38	MALE	BLACK	1.5	3.0	0	0	0	•	227	42	[illegible]	16.77
565	CS	38	MALE	CAU	3.0	3.0	0	0	0	•	[illegible]	72	76	13.82
566	CSS	34	MALE	CAU	1.5	1.5	0	0	0	•	240	[illegible]	48	14.72
567	C	33	MALE	CAU	3.0	1.5	0	0	0	•	238	[illegible]	[illegible]	17.30
568	C	34	MALE	CAU	3.0	3.0	1	0	3.0	•	300	76	78	[illegible]
569	CS	37	MALE	CAU	3.0	3.0	0	0	0	•	300	72	73	14.73
570	CS	32	MALE	CAU	3.0	3.0	0	0	0	•	270	61	71	14.15
571	CS	37	MALE	CAU	3.0	1.5	0	0	0	•	300	76	76	14.40
572	C	38	MALE	CAU	3.0	3.0	0	0	0	•	228	38	41	14.43
573	C	38	MALE	CAU	1.5	1.5	0	0	0	•	241	42	[illegible]	15.33
574	C	42	MALE	BLACK	3.0	3.0	0	0	0	•	300	72	[illegible]	14.06
575	CS	32	MALE	CAU	1.5	1.5	0	0	0	•	•	•	•	•
576	CSS	38	MALE	CAU	3.0	1.5	0	0	0	•	290	71	74	12.47

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
877	C	36	MALE	CAU	3.0	3.0	1	0	3.0	.	300	73	80	11.83
878	CSS	37	MALE	CAU	3.0	3.0	0	0	0	.	282	48	68	14.82
879	C	37	MALE	CAU	3.0	3.0	1	0	0	.	295	68	74	14.88
880	CS	34	MALE	CAU	3.0	3.0	1	0	0	.	300	63	87	13.10
881	C	36	MALE	CAU	1.5	3.0	0	0	0	.	288	62	76	12.78
882	C	36	MALE	HISP	3.0	0	0	0	.	.	270	60	67	16.48
883	C	37	MALE	CAU	1.5	1.5	1	0	0	.	295	76	80	14.37
884	C	32	MALE	HISP	3.0	3.0	0	0	0	.	238	60	64	16.65
885	C	34	MALE	CAU	3.0	0	0	0	0	.	272	78	85	16.35
886	CS	34	MALE	CAU	3.0	1.5	1	0	0	.	288	61	88	13.85
887	CSS	36	FEM...	CAU	3.0	3.0	0	0	0	.	276	34	60	16.10
888	C	34	MALE	BLACK	1.5	1.5	1	0	0	.	275	71	80	16.80
889	C	36	MALE	CAU	3.0	0	0	0	0	.	288	73	77	11.85
890	C	36	MALE	CAU	0	1.5	0	0	0	.	252	50	60	16.35
891	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	74	78	13.80
892	C	37	MALE	CAU	3.0	1.5	1	0	0	.	280	62	63	13.75
893	CSS	36	MALE	BLACK	1.5	1.5	0	0	0	.	197	35	40	16.62
894	CS	41	MALE	CAU	3.0	3.0	0	0	0	.	300	75	75	13.80
895	CS	36	MALE	BLACK	3.0	3.0	0	0	0	.	.	73	76	.
896	C	36	MALE	CAU	3.0	3.0	0	0	0	.	282	66	62	11.72
897	C	36	MALE	CAU	3.0	3.0	1	0	0	.	300	72	81	13.87
898	C	36	MALE	CAU	3.0	3.0	0	0	0	.	288	66	77	14.87
899	CS	40	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	13.08
900	CSS	36	MALE	CAU	3.0	1.5	3	5	10.0	YES	257	57	68	16.45
901	C	37	MALE	CAU	0	0	0	0	0	.	207	67	68	14.78
902	C	36	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	13.87
903	CS	44	MALE	CAU	1.5	1.5	3	1.5	14.0	YES	258	44	57	16.87
904	CSS	36	MALE	CAU	3.0	3.0	1	0	0	.	282	57	67	16.48
905	C	37	MALE	CAU	3.0	3.0	0	0	0	.	288	62	73	14.88
906	CS	45	MALE	CAU	3.0	3.0	1	0	1.0	.	300	73	73	14.88
907	CSS	36	MALE	CAU	3.0	3.0	.	.	.	.	.	.	.	.
908	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	270	53	74	14.80
909	C	36	MALE	CAU	3.0	3.0	0	0	0	.	218	40	60	17.25
910	C	37	MALE	CAU	3.0	3.0	0	0	0	.	300	73	78	13.88
911	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	270	66	64	12.08
912	C	34	MALE	CAU	3.0	3.0	1	0	0	.	300	75	80	13.10
913	CS	32	MALE	CAU	3.0	3.0	0	0	0	.	300	80	85	12.42
914	C	36	MALE	CAU	3.0	3.0	0	0	0	.	258	60	60	14.75
915	CSS	36	MALE	CAU	1.5	1.5	0	0	0	.	258	76	62	14.72
916	CSS	36	MALE	CAU	1.5	0	3	5	10.0	NO	260	60	70	13.00
917	CSS	34	MALE	CAU	3.0	3.0	0	0	0	.	261	56	63	14.85
918	C	37	MALE	CAU	3.0	1.5	1	0	3.0	.	248	47	62	14.88
919	C	36	MALE	CAU	3.0	3.0	0	0	0	.	264	46	70	14.00
920	C	33	MALE	CAU	1.5	3.0	0	0	0	.	241	44	65	14.78
921	C	36	MALE	CAU	1.5	0	0	0	0	.	252	63	67	16.67
922	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	288	66	66	12.83
923	C	35	FEM...	CAU	1.5	1.5	1	0	10.0	.	213	19	60	22.42
924	CSS	42	FEM...	CAU	1.5	3.0	1	0	0	.	221	20	45	22.13

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
635	C	36	MALE	CAU	3.0	1.5	0	0	0	.	317	46	43	16.00
636	C	36	MALE	CAU	3.0	1.5	1	0	0	.	335	37	71	16.20
637	CB	37	MALE	BLACK	3.0	1.5	0	0	0	.	251	46	51	16.77
638	CB	37	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
639	CB	33	MALE	CAU	3.0	0	0	0	0	.	244	56	66	16.00
640	C	33	MALE	CAU	1.5	1.5	0	0	0	.	274	56	71	14.97
641	C	36	MALE	CAU	3.0	1.5	0	0	0	.	248	66	66	16.65
642	CB	34	MALE	CAU	3.0	1.5	0	0	0	.	300	75	76	12.97
643	C	36	MALE	CAU	1.5	3.0	0	0	0	.	290	71	74	14.40
644	CBS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	76	77	13.00
645	C	34	MALE	BLACK	3.0	3.0	0	0	0	.	282	66	76	14.27
646	CB	36	FEM...	CAU	1.5	1.5	1	0	0	.	214	27	66	16.73
647	CBS	37	MALE	CAU	1.5	1.5	0	0	0	.	283	76	76	16.27
648	C	36	MALE	CAU	3.0	3.0	0	0	0	.	237	62	66	16.40
649	CBS	34	MALE	BLACK	1.5	1.5	3	1.0	7.5	YES	220	46	62	17.85
650	CB	36	MALE	OTHER	3.0	3.0	1	0	1.0	.	290	66	66	13.85
651	CBS	41	FEM...	CAU	3.0	1.5	0	0	0	.	236	56	66	21.85
652	C	36	MALE	CAU	3.0	3.0	1	0	6.0	.	300	76	76	14.00
653	CB	34	MALE	CAU	1.5	1.5	0	0	0	.	217	46	57	17.10
654	C	41	MALE	CAU	3.0	3.0	1	0	0	.	.	.	.	.
655	C	34	MALE	CAU	1.5	3.0	0	0	0	.	253	66	66	16.20
656	CB	36	MALE	OTHER	3.0	3.0	0	0	0	.	280	76	64	14.30
657	CBS	37	FEM...	CAU	3.0	3.0	0	0	0	.	300	46	76	16.00
658	C	37	MALE	CAU	3.0	3.0	0	0	0	.	288	66	76	12.93
659	CB	34	MALE	CAU	1.5	1.5	0	0	0	.	261	76	73	16.05
660	CB	46	MALE	CAU	3.0	1.5	1	0	0	.	.	66	66	.
661	C	33	MALE	CAU	3.0	1.5	0	0	0	.	249	66	66	15.97
662	C	40	MALE	.	1.5	0	0	0	0	.	.	.	.	.
663	C	36	MALE	CAU	3.0	1.5	0	0	0	.	300	76	76	12.93
664	CBS	32	FEM...	CAU	3.0	3.0	0	0	0	.	276	56	66	16.00
665	C	34	MALE	CAU	3.0	3.0	0	0	0	.	300	75	76	12.77
666	C	34	MALE	CAU	1.5	1.5	1	0	0	.	233	66	66	16.70
667	CBS	33	FEM...	CAU	1.5	0	0	0	0	.	214	36	66	16.30
668	CB	34	MALE	CAU	1.5	1.5	0	0	0	.	29*	76	76	12.93
669	CBS	42	MALE	CAU	3.0	3.0	0	0	0	.	300	76	66	13.40
670	CB	36	MALE	CAU	1.5	3.0	0	0	0	.	297	76	76	12.93
671	C	36	MALE	CAU	1.5	1.5	0	0	0	.	256	46	66	16.35
672	C	36	MALE	CAU	3.0	3.0	1	0	0	.	291	76	62	12.90
673	C	34	MALE	CAU	3.0	3.0	0	0	0	.	276	62	76	13.30
674	CBS	41	MALE	CAU	1.5	1.5	0	0	0	.	260	66	64	16.60
675	C	37	MALE	CAU	3.0	3.0	1	0	1.0	.	307	46	66	17.10
676	C	36	MALE	BLACK	3.0	3.0	0	0	0	.	276	66	66	13.77
677	C	36	MALE	CAU	3.0	3.0	0	0	0	.	243	47	62	16.47
678	CBS	37	MALE	CAU	1.5	1.5	0	0	0	.	.	.	.	.
679	CB	33	MALE	CAU	3.0	3.0	0	0	0	.	285	66	66	14.25
680	CBS	41	FEM...	CAU	3.0	3.0	0	0	0	.	300	66	72	16.62
681	CB	34	MALE	CAU	3.0	3.0	0	0	0	.	246	61	61	17.20
682	C	34	MALE	CAU	3.0	3.0	1	0	0	.	275	61	65	15.25

	BRANCH	AGE	SEX	RACE	AEROBICS	STRENGTH	SMOKE	AMOUNT	YRS	QUIT	PT SCORE	P-U	S-U	RUN
673	C	37	MALE	CAU	3.0	3.0	0	0	0	.	321	62	51	10.36
674	C	33	MALE	CAU	1.5	1.5	1	0	0	.	360	75	75	10.70
675	CSS	33	MALE	CAU	1.5	1.5	0	0	0	.	355	60	70	10.40
676	C	34	MALE	CAU	1.5	1.5	0	0	0	.	352	65	60	10.03
677	CS	34	FEM...	CAU	3.0	1.5	0	0	0	.	300	60	62	10.05
678	C	33	MALE	CAU	3.0	3.0	0	0	0	.	350	72	80	10.85
679	CS	34	MALE	CAU	3.0	3.0	0	0	0	.	300	60	65	12.85
680	C	36	MALE	CAU	3.0	3.0	1	0	0	.	337	60	70	14.12
681	CS	37	MALE	CAU	1.5	3.0	0	0	0	.	306	60	70	11.82
682	CS	37	MALE	CAU	3.0	1.5	1	0	0	.	310	47	60	17.82
683	C	36	MALE	CAU	1.5	1.5	0	0	0	.	317	48	60	10.70
684	CSS	32	MALE	CAU	3.0	3.0	0	0	0	.	270	60	74	12.65
685	C	37	MALE	CAU	3.0	3.0	0	0	0	.	350	63	62	11.88
686	C	36	MALE	CAU	3.0	3.0	0	0	0	.	372	66	75	10.08
687	C	36	MALE	CAU	3.0	3.0	0	0	0	.	350	63	65	11.77
688	CSS	35	MALE	CAU	3.0	3.0	0	0	0	.	300	144	122	12.82
689	CSS	37	MALE	CAU	3.0	3.0	0	0	0	.	300	75	75	13.77
690	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	350	74	80	13.68
691	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	357	64	60	11.78
692	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	222	40	57	10.73
693	C	37	MALE	CAU	3.0	3.0	0	0	0	.	300	75	80	13.10
694	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	300	77	87	12.68
695	CS	36	MALE	CAU	3.0	3.0	0	0	0	.	356	60	73	14.85
696	CS	36	FEM...	CAU	0	1.5	0	0	0	.	.	.	.	.
697	CSS	36	MALE	CAU	3.0	3.0	1	0	0	.	350	75	75	11.78
698	CSS	36	MALE	CAU	3.0	3.0	1	5	0	.	322	46	57	10.18
699	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	350	62	67	10.78
700	CS	34	MALE	BLACK	3.0	3.0	0	0	0	.	274	56	60	11.28
701	CSS	35	MALE	CAU	1.5	1.5	1	0	0	.	184	50	55	10.57
702	CSS	37	MALE	BLACK	3.0	3.0	0	0	0	.	.	.	.	.
703	CSS	36	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
704	CS	36	MALE	CAU	3.0	1.5	0	0	0	.	.	.	.	.
705	C	37	MALE	BLACK	3.0	3.0	1	0	15.0	.	.	.	.	.
706	C	34	MALE	BLACK	3.0	3.0	0	0	0	.	.	.	.	.
707	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
708	CS	37	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
709	CSS	36	MALE	CAU	3.0	3.0	1	0	7.5	.	.	.	.	.
710	C	36	MALE	CAU	3.0	3.0	0	0	0	.	.	.	.	.
711	C	36	MALE	CAU	1.5	1.5	1	0	0	.	.	.	.	.
712	CS	37	MALE	CAU	3.0	3.0	3	1.5	10.0	YES	196	36	42	10.95

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